

Advancement Handbook for Aerographer's Mate

PREFACE

The purpose of the Advancement Handbook is to help you focus your preparation for Navywide advancement-in-rating examinations. The bibliographies (BIBs) together with this handbook form a comprehensive examination study package. Since this handbook provides skill and knowledge components for each paygrade of the Aerographer's Mate (AG) rating, it helps you concentrate your study on those areas that may be tested. This feature will help you get the most out of your study time.

Each page in Parts 1 through 4 of this Advancement Handbook presents general skill areas, specific skill areas, the knowledge factors associated with each skill area, the pertinent *References* that address each skill, and the subject areas that may be covered on the examination. The skill statements describe the skills you are expected to perform for each paygrade. The skill statements are cumulative; that is, you are responsible for the skills for the paygrade you are competing for, your present paygrade, and all paygrades below.

Although this handbook is very comprehensive, it cannot cover all the tasks performed in the rating. As a result, the advancement examinations may contain questions more detailed than described in the “*Exam Expectations*” Section of the skill areas.

Remember that advancement competition is keen, so your keys to advancement include not only comprehensive advancement examination study but also sustained superior performance.

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Part 1

Advancement Handbook for AG3

Advancement Handbook for AG3

General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Measure temperatures to include dry-bulb, wet-bulb, and sea surface
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Accuracy requirements for reporting temperature measurements • Procedures for operating temperature measuring equipment • Units of measure for temperature
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapters 1 and 2 (NAVEDTRA 12850) • Automated Surface Observing System User's Guide, Chapter 2 (ASOS) • Operator's Manual, Tactical Environmental Support System (TESS (3)) and Shipboard Meteorological and Oceanographic Observing System (SMOOS), Volume III, Section 3.13 (NAVELEXCEN VJO 14203-0302428A) • Surface METAR Observations User's Manual, Chapter 7 (NAVMETOCCOMINST 3141.2) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapter 7 (NAVMETOCCOMINST 3144.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for obtaining temperature measurements from temperature equipment to include the electric psychrometer, sling psychrometer, bucket method, and shipboard injection temperature. You can also expect questions about the degree of accuracy required and the different temperature scales.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Compute temperature elements to include dew-point and relative humidity
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for obtaining dry bulb temperatures, wet bulb temperatures, and wet-bulb depression • Procedures for operating the CP-165/UM psychometric computer • Procedures for using dew-point and relative humidity tables
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 1 (NAVEDTRA 12850) • Surface METAR Observations User's Manual, Chapter 7 (NAVMETOCOMINST 3141.2) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapter 2 (NAVMETOCOMINST 3144.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for computing the dew-point and relative humidity using the CP-165/UM psychometric computer, tables contained in the Surface METAR Observations User's Manual and the United States Navy Manual For Ship's Surface Weather Observations.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Compute physiological indicators from observed environmental data to include wind chill factor and heat stress index
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for obtaining surface wind and dry-bulb temperature • Procedures for using the wind chill equivalent temperature nomogram • Procedures for using the general heat stress index nomogram
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 1 (NAVEDTRA 12850) • Meteorology Today, an Introduction to Weather, Climate, and the Environment, Fourth Edition, C. Donald Ahrens, Chapter 4 (METOC 50-1T-9605)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for computing the wind chill equivalent temperature and the general heat stress index using an appropriate nomogram.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Compute true wind speeds and directions
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Accuracy requirements for reporting wind measurements • Procedures for determining relative wind direction and speed from a ships anemometer or an AN/PMQ-3 hand held anemometer • Procedures for using the CP-264/U true wind computer • Procedures for using a maneuvering board • Procedures for using an aerological plotting board
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapters 1 and 2 (NAVEDTRA 12850) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapter 8 (NAVMETOC COMINST 3144.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures in obtaining relative wind direction and speed from a ships anemometer, the AN/PMQ-3, and the procedures for converting that information into true wind using the CP-264/U true wind computer, maneuvering board, and aerological plotting board.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Record psychrometric computer temperatures
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Accuracy requirements for reporting temperature measurements • Units of measure for temperature • Procedures for computing the dew-point, dew-point depression, and relativity humidity on the CP-165/UM psychrometric computer • Procedures for entering the temperature on the CNMOC 3140/12 form and the CNMOC 3141/3 form
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Surface METAR Observations User's Manual, Chapter 7 (NAVMETOCCOMINST 3141.2) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapter 7 (NAVMETOCCOMINST 3144.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for entering the dew-point, dew-point depression, and relative humidity temperatures that you compute on the psychrometric computer, onto the CNMOC 3140/12 METAR form and the CNMOC 3141/3 shipboard form.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Compute sea level and station pressures
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Accuracy requirements for reporting pressure measurements • Units of measure for pressure • Procedures for reading pressure values from the ML-448/UM precision aneroid barometer • Procedures for obtaining pressure values from the ASOS and SMOOS • Procedures for using the CP-402/UM pressure reduction computer • Procedures for applying the removal correction to the ML-448/UM • Procedures for using pressure reduction tables
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 1 (NAVEDTRA 12850) • Automated Surface Observing System User's Guide (ASOS), Chapter 3 • Operator's Manual, Tactical Environmental Support System (TESS (3)) and Shipboard Meteorological and Oceanographic Observing System (SMOOS), Volume III, Section 3.13 (NAVELEXCEN VJO 14203-0302428A) • Surface METAR Observations User's Manual, Chapter 6 (NAVMETOCCOMINST 3141.2) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapter 6 (NAVMETOCCOMINST 3144.1)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the procedures for computing station pressure and sea level pressure using the CP-402/UM pressure reduction computer and pressure reduction tables. You can also expect questions about the procedures for applying height corrections to the ML-448/UM precision aneroid barometer and the degree of accuracy required. You can also expect questions about the procedures for obtaining pressure readings from the ASOS and SMOOS.</p>
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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Compute pressure altitude and density altitude data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Units of measure for pressure • Procedures for reading pressure values from the ML-448/UM precision aneroid barometer • Procedures for obtaining pressure values from the ASOS and SMOOS • Procedures for using the CP-402/UM pressure reduction computer • Procedures for using the CP-718/UM density altitude computer • Procedures for using density altitude tables and pressure altitude tables
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 1 (NAVEDTRA 12850) • Automated Surface Observing System User's Guide (ASOS), Chapter 3 • Operator's Manual, Tactical Environmental Support System (TESS (3)) and Shipboard Meteorological and Oceanographic Observing System (SMOOS), Volume III, Section 3.13 (NAVELEXCEN VJO 14203-0302428A) • Surface METAR Observations User's Manual, Chapter 6 (NAVMETOCCOMINST 3141.2) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapter 6 (NAVMETOCCOMINST 3144.1)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the procedures for computing pressure altitude data using the CP-402/UM pressure reduction computer and density altitude data using the CP-718/UM density altitude computer. You can also expect questions about the procedures for using the pressure altitude tables and density altitude tables.</p>
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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Convert Fahrenheit temperatures to Celsius
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Mathematical formula for converting Fahrenheit temperatures to Celsius and Celsius to Fahrenheit • Procedures for using temperature conversion tables
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 1, (NAVEDTRA 12850) • Surface METAR Observations User's Manual, Chapter 7 (NAVMETOC COMINST 3141.2) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapter 7 (NAVMETOC COMINST 3144.1) • Meteorology Today, an Introduction to Weather, Climate, and the Environment, Fourth Edition, C. Donald Ahrens, Chapter 2 (METOC 50-1T-9605)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for performing the mathematical conversion of Fahrenheit temperature to Celsius and Celsius temperature to Fahrenheit.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Convert hectopascals to inches of mercury
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Mathematical formula for converting hectopascals to inches of mercury and inches of mercury to hectopascals • Procedures for using pressure conversion tables
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 1 (NAVEDTRA 12850) • Meteorology Today, an Introduction to Weather, Climate, and the Environment, Fourth Edition, C. Donald Ahrens, Chapter 2 (METOC 50-1T-9605) • Surface METAR Observations User's Manual, Chapter 6 (NAVMETOCCOMINST 3141.2) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapter 6 (NAVMETOCCOMINST 3144.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for the mathematical conversion of hectopascals to inches of mercury and inches of mercury to hectopascals.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Calculate sea state conditions
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Characteristics of sea waves and swell waves • Procedures for observing sea waves and swell waves • Procedures for using the fully arisen sea by wind speed and duration tables • Wave terminology to include wave parts and Romeo Corpin
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 1 (NAVEDTRA 12850) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapter 9 (NAVMETOC COMINST 3144.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for observing and calculating the height and direction of sea and swell waves aboard ships. You can also expect questions about the procedures for wave terminology such as height, length, period, direction, and Romeo Corpin. You can also expect questions about the procedures for the relationship between wind speed, duration, and fetch to wave height.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Evaluate the state of skies
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Types and characteristics of clouds • Types of surface based obscurations • Units of measure for cloud height • Reportable values for cloud height • Procedures for estimating cloud height and amount • Procedures for obtaining cloud height data from the ASOS, SMOOS, and Pilot Weather Reports (PIREPS) • Use of convective cloud height tables • Use of sky cover evaluation tables • Summation sky coverage concept • Process of cloud development
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapters 1 and 2 (NAVEDTRA 12850) • Automated Surface Observing System User's Guide (ASOS), Chapter 4 • Operator's Manual, Tactical Environmental Support System (TESS (3)) and Shipboard Meteorological and Oceanographic Observing System (SMOOS), Volume III, Section 3.13 (NAVELEXCEN VJO 14203-0302428A) • Meteorology Today, an Introduction to Weather, Climate, and the Environment, Fourth Edition, C. Donald Ahrens, Chapter 9 (METOC 50-1T-9605) • Procedures Governing Pilot Weather Reports (NAVMETOC COMINST 3142.1)

	<ul style="list-style-type: none"> • Surface METAR Observations User's Manual, Chapter 3 (NAVMETOCCOMINST 3141.2) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapter 3 (NAVMETOCCOMINST 3144.1)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the procedures for evaluating the state of the sky to include estimating and measuring cloud amount and height using meteorological equipment, tables, and PIREPS. You can also expect questions about the different cloud identification schemes to include form, genus, species, and variety. You can also expect questions about the cloud development process.</p>

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Estimate prevailing visibility
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Units of measure for prevailing visibility • Reportable values for visibility • Types of visibility • Effect of weather and obstructions to vision on prevailing visibility • Procedures for estimating visibility and measuring visibility using meteorological equipment • Procedures for estimating visibility and obtaining visibility data from the ASOS, SMOOS
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 1 (NAVEDTRA 12850) • Surface METAR Observations User's Manual, Chapter 4 (NAVMETOCCOMINST 3141.2) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapter 4 (NAVMETOCCOMINST 3144.1) • Automated Surface Observing System User's Guide (ASOS), Chapter 4 • Operator's Manual, Tactical Environmental Support System (TESS (3)) and Shipboard Meteorological and Oceanographic Observing System (SMOOS), Volume III, Section 3.13 (NAVELEXCEN VJO 14203-0302428A)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the procedures in estimating the prevailing visibility at shore locations and aboard ships. You can also expect questions about the different types of visibility to include prevailing, sector, variable prevailing, and tower visibility. You can also expect questions about the units of measure for visibility and the reportable values.</p>
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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Record observed surface wave data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Accuracy requirements for reporting surface wave data • Units of measure for wave height • Procedures for entering the wave data on the CNMOC 3141/3 form
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 1 (NAVEDTRA 12850) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapter 9 (NAVMETOC COMINST 3144.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for entering sea and swell wave data on the CNMOC 3141/3 shipboard form. You can also expect question on how to enter calm seas, confused seas, and multiple swell waves.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Compute modified surf indexes (MSI)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Types and characteristics of surf breakers • Terminology relating to surf observations (SUROB) • Procedures for decoding a SUROB • Procedures for completing the MSI worksheet • Procedures for computing the MSI using GFMPL and TESS surf programs
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 6 (NAVEDTRA 12850) • COMNAVSURFPAC/ COMNAVSURFLANTINST Joint Surf Manual, Chapters 4, 5, 6, 10, and 11 (CNSPINST/CNSLINST 3840.1) • Geophysics Fleet Mission Program Library New Technology (GFMPL NT) Version 2.0 User's Manual, Chapter 3 (GFMPL NT 97-01BUG) • Tactical Environmental Support System (TESS) User's Guide
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the different types and characteristics of breakers and the terminology relating to surf observations. You can also expect questions about the procedures for using the MSI worksheet and the GFMPL and TESS surf programs.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Process Optimum Path Aircraft Routing System (OPARS) requests to include encoding, decoding, transmitting message, and verifying data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Terminology related to OPARS requests and the completed OPARS flight plan • Procedures for entering flight route and aircraft performance data into the OPARS program • Procedures for submitting and retrieving an OPARS request
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Fleet Numerical Meteorological and Oceanographic Center OPARS Manual (P-3710)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the terminology related to an OPARS request and interpreting a processed OPARS flight plan. You can also expect questions about the procedures for entering the flight route and aircraft performance data into the OPARS program and submitting it for processing.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Process 3 and 6 hourly additive data to include encoding, decoding, and determining additive data groups
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for encoding and decoding the METAR additive data groups • Procedures for entering the additive data groups on the CNMOC 3140/12 and CNMOC 3141/3 forms • Types of meteorological elements that should be included as additive data
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 3 (NAVEDTRA 12850) • Surface METAR Observations User's Manual, Chapter 9 (NAVMETOCCOMINST 3141.2) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapter 5 (NAVMETOCCOMINST 3144.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for encoding and decoding the METAR additive data groups and where they are entered on the CNMOC 3140/12 and CNMOC 3141/3 forms. You can also expect questions about which meteorological elements should be included as additive data.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Process METAR observation data to include, recording, encoding, decoding observations, and determining observation type and criteria
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for recording, encoding, and decoding the FM 15 METAR code including runway condition data • Procedures for entering the METAR observation on the CNMOC 3140/12 and CNMOC 3141/3 forms • Types and requirements of meteorological elements that should be included in the METAR observation
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 3 (NAVEDTRA 12850) • Surface METAR Observations User's Manual, Chapter 9 (NAVMETOC COMINST 3141.2) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapter 5 (NAVMETOC COMINST 3144.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for encoding and decoding the METAR code and recording it on the CNMOC 3140/12 and CNMOC 3141/3 forms. You can also expect questions about meteorological elements that should be included and the parameters requiring a special observation. You can also expect questions about how to encode and decode runway condition data.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Process Pilot Reports (PIREPS) to include encoding, decoding, and verifying the data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for encoding and decoding PIREPS • Procedures for entering PIREPS on NMOC 3140/10 form • Requirements and types of meteorological elements that should be included in PIREPS
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 6 (NAVEDTRA 12850) • Procedures Governing Pilot Weather Reports (NAVMETOCCOMINST 3142.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for encoding and decoding PIREPS and entering them on the NMOC 3140/10 form. You can also expect questions about what meteorological elements should be included in PIREPS.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Process terminal aerodrome forecasts (TAF) to include encoding and decoding
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for encoding and decoding the FM 51 TAF code • Meteorological elements that should be included in the TAF
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerodrome Forecast (TAF) Code (NAVMETOC COMINST 3143.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for encoding and decoding the TAF and the meteorological elements that should be included in it.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Process synoptic observation data to include encoding and decoding the shipboard and land synoptic observation
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for encoding and decoding the FM 12 SYNOP code and the FM 13 SHIP code • Meteorological elements that should be included in the SYNOP and SHIP codes
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 3 (NAVEDTRA 12850) • Manual on Codes, International Codes Volume I.1 Part A (WMO-No. 306) • United States Navy Manual For Ship's Surface Weather Observations, Section III (NAVMETOC COMINST 3144.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for encoding and decoding the SYNOP and SHIP codes.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Decode buoy data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none">• Procedures for decoding the FM 18 BUOY code
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none">• Manual on Codes, International Codes Volume I.1 Part A (WMO-No. 306)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for decoding the BUOY code.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Decode rawinsonde data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for decoding and encoding the FM 35 TEMP, FM 36 TEMP SHIP, and FM 38 TEMP MOBIL codes
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 4 (NAVEDTRA 12850) • Manual on Codes, International Codes Volume I.1 Part A (WMO-No. 306) • Federal Meteorological Handbook No. 3 Rawinsonde and Pibal Observations, Appendix E (FCM-H3-1997) • DigiCORA MW11 & MARWIN MW12 User's Guide for US NAVY, Section 5, All Chapters (MW-U005en-1.3)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for decoding and encoding the TEMP, TEMP SHIP, and TEMP MOBIL codes.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Plot meteorological elements to include aviation surface report data, ship and surface synoptic data, in-flight weather advisory data, and severe weather watches and warnings
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for decoding the FM 15 METAR, FM 12 SYNOP, FM 13 SHIP, and FM 14 SYNOP MOBIL reports • Standards for plotting the METAR, SYNOP, SHIP, and SYNOP MOBIL reports • Procedures for interpreting and plotting SIGMETS, severe weather watches and warnings, and tropical cyclone formation alerts
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 9 (NAVEDTRA 12850) • Surface METAR Observations User's Manual, Chapter 9 (NAVMETOC COMINST 3141.2) • United States Navy Manual For Ship's Surface Weather Observations, Section III (NAVMETOC COMINST 3144.1) • Manual on Codes, International Codes Volume I.1 Part A (WMO-No. 306)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for decoding the METAR, SYNOP, SHIP, and SYNOP MOBIL reports and the plotting standards and symbols. You can also expect questions about the procedures for interpreting and plotting SIGMETS, severe weather watches and warnings, and tropical cyclone formation alerts.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Brief meteorological warning data to include severe weather warnings and advisories and tropical cyclone warning displays
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none">• Interpretation of severe weather warnings and advisories and tropical cyclone warnings• Procedures for conducting meteorological briefs
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none">• Aerographer's Mate Third Class, Chapter 9 (NAVEDTRA 12850)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for interpreting severe weather warnings and advisories and tropical cyclone warnings. You can also expect questions about the procedures for conducting meteorological briefs on weather warnings and advisories.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Monitor severe weather warning (WW) area forecasts
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none">• Procedures for interpreting and plotting severe weather watches and warnings
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none">• Aerographer's Mate Third Class, Chapter 9 (NAVEDTRA 12850)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for interpreting, plotting, and updating severe weather watches and warnings.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Assess types of weather phenomena
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Types and characteristics of lithometeors, hydrometeors, electrometeors, and photometeors • Cloud development process • Basic meteorology physics • Basic meteorological terminology
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 1 (NAVEDTRA 12850) • Meteorology Today, an Introduction to Weather, Climate, and the Environment, Fourth Edition, C. Donald Ahrens, Chapters 5, 7, 8, 9, 16, and 17 (METOC 50-1T-9605) • Surface METAR Observations User's Manual, Chapters 3, 4, and 5 (NAVMETOCCOMINST 3141.2) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapters 3, 4, and 5 (NAVMETOCCOMINST 3144.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the different types and characteristics of lithometeors, hydrometeors, electrometeors, and photometeors. You can also expect questions about the cloud development processes, hydrologic cycle, basic meteorology physics, and terminology.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Compile flight weather folders
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures and information required for compiling a flight weather folder • Procedures for completing the NOC form 3140/25
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 9 (NAVEDTRA 12850) • Procedures Governing Flight Weather Briefings, and Preparing DD Form 175-1, and U.S. Navy Flight Forecast Folder (NAVMETOC COMINST 3140.14)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for compiling a flight weather folder and what information should be included in it. You can also expect questions about the required entries in each block of the NOC form 3140/25.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Acquire satellite imagery data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Types of environmental satellites • Types of satellite imagery • Procedures for acquiring satellite imagery data • Procedures for updating ephemeris data • Procedures for calculating satellite acquisition times • Satellite terminology
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 7 (NAVEDTRA 12850) • GOES Tap Imaging System (GTIS) • Meteorology Today, an Introduction to Weather, Climate, and the Environment, Fourth Edition, C. Donald Ahrens, Chapter 7 (METOC 50-1T-9605)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the different types of environmental satellites and satellite imagery. You can also expect questions about the procedures for acquiring satellite imagery data, updating ephemeris data, and calculating satellite acquisition times.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare Under Sea Warfare (USW) products and information to include platform and group radar detection vulnerability, acoustic sensor performance prediction, acoustic propagation loss, sound speed profile diagrams, and Magnetic Anomaly Detection (MAD) operational effectiveness
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for entering required environmental data into GFMPL and TESS USW programs • Procedures for decoding the FM 63 BATHY code • USW products available from GFMPL and TESS USW programs • USW terminology • Fundamentals of acoustics and sound ray theory
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Acoustics and Sound Ray Theory (METOC 60-1T-9602) • Evaluating and Encoding Bathythermograph (BT) Data (METOC 60-1T-9701) • Manual on Codes, International Codes Volume I.1 Part A (WMO-No. 306) • Fleet Oceanographic and Acoustic Reference Manual, Chapters 1, 2, 6, 7, 8 (RP 33) • Geophysics Fleet Mission Program Library New Technology (GFMPL NT) Version 2.0 User's Manual, Chapters 2 and 3 (GFMPL NT 97-01BUG) • Tactical Environmental Support System (TESS) User's Guide

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the procedures for entering environmental data into the GFMPL and TESS USW programs. You can also expect questions about the procedures for decoding the BATHY code and USW terminology. You can also expect questions about basic acoustics and sound ray theory.</p>
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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare naval search and rescue (SAR) products and information
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for entering required environmental data into GFMPL and TESS SAR programs • Alternate sources for obtaining SAR products and information • SAR terminology
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Geophysics Fleet Mission Program Library New Technology (GFMPL NT) Version 2.0 User's Manual, Chapters 2 and 3 (GFMPL NT 97-01BUG) • Tactical Environmental Support System (TESS) User's Guide • United States Navy Meteorological & Oceanographic Support System Manual, Chapter 2 (NAVMETOCCOMINST 3140.1) • Fleet Numerical Meteorological and Oceanographic Center Products Manual, Chapter 2 (P-3140)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for entering the required environmental data into the GFMPL and TESS SAR programs. You can also expect questions about SAR terminology and the SAR programs available from FNMOC.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare ship icing products and information
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Types of ship icing • Procedures for using GF MPL and TESS ship ice programs
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • United States Navy Manual For Ship's Surface Weather Observations, Section II, (NAVMETOC COMINST 3144.1) • Geophysics Fleet Mission Program Library New Technology (GF MPL NT) Version 2.0 User's Manual, Chapters 2 and 3 (GF MPL NT 97-01BUG) • Tactical Environmental Support System (TESS) User's Guide
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the different types of ship icing and the procedures for obtaining ship-icing products from the GF MPL and TESS ship icing programs.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Compute altimeter settings
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Accuracy requirements for reporting altimeter settings • Units of measure for altimeter settings • Procedures for reading pressure values from the ML-448/UM precision aneroid barometer • Procedures for obtaining pressure values from the ASOS and SMOOS • Procedures for using the CP-402/UM pressure reduction computer • Procedures for using altimeter setting tables
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 1 (NAVEDTRA 12850) • Automated Surface Observing System User's Guide (ASOS), Chapter 3 • Operator's Manual, Tactical Environmental Support System (TESS (3)) and Shipboard Meteorological and Oceanographic Observing System (SMOOS), Volume III, Section 3.13 (NAVELEXCEN VJO 14203-0302428A) • Surface METAR Observations User's Manual, Chapter 6 (NAVMETOCCOMINST 3141.2) • United States Navy Manual For Ship's Surface Weather Observations, Section II, Chapter 6 (NAVMETOCCOMINST 3144.1)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the procedures for computing the altimeter setting using the CP-402/UM pressure reduction computer and altimeter setting tables. You can also expect questions about the degree of accuracy required and the units of measure.</p>
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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare bathythermograph (BT) report messages
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for encoding and decoding the FM 63 BATHY code • Oceanographic elements that should be included in the BATHY code • Procedures for selecting the significant levels on the BT trace that should be encoded • Procedures for identifying anomalous features in BT recordings
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 5 (NAVEDTRA 12850) • Evaluating and Encoding Bathythermograph (BT) Data (METOC 60-1T-9701) • Manual on Codes, International Codes Volume I.1 Part A (WMO-No. 306) • Guide to Common Shipboard Expendable BT Recording Malfunctions (RP 21)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for encoding and decoding each group of the BATHY code. You can also expect questions about the procedures for selecting the required significant levels on a recorded BT trace and evaluating it for anomalous features.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare atmospheric refraction products and information to include surface search radar range, electronic countermeasures (ECM) effectiveness, and forward looking infrared (FLIR)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for entering required environmental data into GF MPL and TESS electromagnetic programs • Atmospheric refraction products available • Atmospheric refraction terminology
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Geophysics Fleet Mission Program Library New Technology (GF MPL NT) Version 2.0 User's Manual, Chapter 3 (GF MPL NT 97-01BUG) • Tactical Environmental Support System (TESS) User's Guide
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for entering environmental data into the GF MPL and TESS atmospheric refraction programs. You can also expect questions about atmospheric refraction terminology.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Decode radar observation data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none">• Procedures for decoding radar observation data
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none">• Aerographer's Mate Third Class, Chapter 6 (NAVEDTRA 12850)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for decoding and interpreting radar observation data.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Plot chemical, biological, radiological (CBR) effective downwind message (EDM) data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for decoding and plotting CBR EDMs, NAV EDMs, chemical downwind messages (CDM), and NAV CDMs • Procedures for using CBR templates • CBR terminology
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 9 (NAVEDTRA 12850) • Reporting Nuclear Detonations, Biological and Chemical Attacks, and Predicting and Warning of Associated Hazards and Hazard Areas, Chapters 2, 7, 9, and 13 (ATP 45)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for decoding and plotting CBR EDMs, NAV EDMs, CDMs, and NAV CDMs. You can also expect questions about the procedures for using CBR templates and CBR terminology.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Analyze large scale hydrographic ocean bottom feature data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for analyzing ocean floor topography and composition data • Ocean floor topography and composition terminology
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Fleet Oceanographic and Acoustic Reference Manual, 4 (RP 33) • Oceanography, Sixth Edition, Chapter 2 (METOC 60-1T-9601)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for analyzing the ocean floor topography and composition data. You can also expect questions about ocean floor topography and composition terminology.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Analyze surface pressure chart data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for analyzing surface pressure chart data • Procedures for decoding the FM 12 SYNOP, FM 13 SHIP, and FM 15 METAR codes • Procedures for determining location of fronts and pressure centers • Relationship between isobaric spacing and wind speed
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 9 (NAVEDTRA 12850) • Basic Surface Analysis (METOC 50-1T-9603) • Encoding, Decoding, and Plotting the Synoptic Report (METOC 50-1T-9606) • Surface METAR Observations User's Manual, Chapter 9 (NAVMETOCCOMINST 3141.2) • United States Navy Manual For Ship's Surface Weather Observations, Section III, Chapter 1 (NAVMETOCCOMINST 3144.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for performing a basic surface chart analysis. You can also expect questions about the wind and isobar relationship and the indicators for locating fronts. You can also expect questions about the procedures for decoding the SYNOP, SHIP, and METAR codes.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare Skew T, log P diagram plots
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for decoding the FM 35 TEMP, FM 36 TEMP SHIP, and FM 38 TEMP MOBIL codes • Procedures for preparing and plotting the Skew T, log P diagram • Procedures for constructing a pressure altitude (PA) curve • Familiarization with the Skew T, log P diagram
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 9 (NAVEDTRA 12850) • Manual on Codes, International Codes Volume I.1 Part A (WMO-No. 306) • The Use of the Skew T, Log P Diagram in Analysis and Forecasting, Chapter 3 (NAVAIR 50-1P-5)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for decoding the TEMP, TEMP SHIP, and TEMP MOBIL codes. You can also expect questions about the procedures for preparing and plotting the Skew T, log P diagram and diagram familiarization. You can also expect questions about the procedures for constructing a PA curve and meteorological quantities such as the convection condensation level (CCL), level of free convection (LFC), convection temperature (CT), stability indices, etc.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Process environmental data to include accessing and verifying supplemental data in the shipboard meteorological Oceanographic observation system (SMOOS) and the automatic surface observing system (ASOS)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for accessing and verifying environmental data from the ASOS and SMOOS
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 2 (NAVEDTRA 12850) • Automated Surface Observing System User's Guide (ASOS), Chapters 3 and 4 • Operator's Manual, Tactical Environmental Support System (TESS (3)) and Shipboard Meteorological and Oceanographic Observing System (SMOOS), Volume III, Section 3.13 (NAVELEXCEN VJO 14203-0302428A)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for accessing and verifying environmental data from the ASOS and SMOOS. You can also expect questions about the strengths and limitations of the individual environmental data sensors.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Utilize the geophysics fleet mission program library (GFMPL) programs to include accessing and generating support products for tidal height predictions, tomahawk land attack missile (TLAM) support, and radiological fallout (RADFO) support
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for entering required environmental data into GFMPL and TESS • Procedures for accessing and generating support products for tidal height predictions, TLAM support, and RADFO
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapters 9 and 10 (NAVEDTRA 12850) • Geophysics Fleet Mission Program Library New Technology (GFMPL NT) Version 2.0 User's Manual, Chapter 3 (GFMPL NT 97-01BUG) • Tactical Environmental Support System (TESS) User's Guide
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for entering environmental data into GFMPL and TESS. You can also expect questions about the procedures for accessing and generating support products for tidal height predictions, TLAM support, and RADFO.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Interpret surf observations
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for decoding and encoding surf observations (SUROBs) • Procedures for using the SUROB worksheet • Surf observation terminology
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 6 (NAVEDTRA 12850) • COMNAVSURFPAC/ COMNAVSURFLANTINST Joint Surf Manual, Chapter 10 (CNSPINST/CNSLINST 3840.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for decoding and encoding SUROBs and using the SUROB worksheet. You can also expect questions about surf observation terminology such as breaker types, height, period, angle, surf zone, and littoral current.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Review METOC publications to include local area forecaster's handbooks and technical bulletins
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • METOC support publications
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • United States Navy Meteorological & Oceanographic Support System Manual, Appendix A (NAVMETOC COMINST 3140.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about which METOC support publications are available for review and use.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Analyze satellite imagery pressure center location data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Cloud pattern recognition for pressure centers
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Basic Satellite Imagery Interpretation (METOC 50-1T-9601)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for locating high pressure and low pressure centers using satellite imagery. You can also expect questions about locating the surface position relative to the cloud pattern.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Identify synoptic scale features on surface and upper air meteorological products and the general circulation of the atmosphere
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Methods of identifying synoptic scale features on surface and upper air charts • Familiarization with the single-cell and the three-cell circulation models • Location of the semi-permanent high and low pressure centers
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Basic Surface Analysis (METOC 50-1T-9603) • Meteorology Today, an Introduction to Weather, Climate, and the Environment, Fourth Edition, C. Donald Ahrens, Chapters 10 and 12 (METOC 50-1T-9605)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the methods of identifying synoptic scale features on surface and upper air charts to include fronts, troughs, ridges, pressure centers, and air masses. You can also expect questions about the single-cell and three-cell circulation models, the general location of the semi-permanent highs and lows, and the different forces that affect the wind.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Identify oceanographic features to include the thermal structure of the ocean, ocean water masses, and major ocean currents
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Characteristics of ocean water masses • Names and location of major ocean currents • Familiarization with the three thermal layers of the ocean • Basic oceanography physics and terminology
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Fleet Oceanographic and Acoustic Reference Manual, Chapters 5 and 6 (RP 33) • Oceanography, Sixth Edition, Chapter 4 (METOC 60-1T-9601)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the different thermal layers of the ocean and the formation of ocean water masses. You can also expect questions about the composition of the ocean and bioluminescence. You can also expect questions about the names and location of the major ocean currents throughout the world and basic oceanography physics and terminology.

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Interpret ditch headings and altimeter settings
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> Procedures for interpreting ditch heading and altimeter setting data received from Fleet Numerical Meteorology and Oceanography Center (FNMOC)
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> Aerographer's Mate Third Class, Chapter 9 (NAVEDTRA 12850)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for decoding the numerical ditch heading and altimeter setting data received from Fleet Numerical Meteorology and Oceanography Center (FNMOC).

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General AG <i>Skill Area</i>	Environmental Predictions Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Monitor Doppler radar meteorological feature movement and intensity data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for obtaining thunderstorm movement and intensity from the WSR-88D Doppler radar
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • WSR-88D Operator Handbook Principal User Processor, Volume I, Graphic Tablet (WSR-88D Handbook PUP-I)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for obtaining thunderstorm movement and intensity information from the WSR-88D Doppler radar.

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General AG <i>Skill Area</i>	Management and Supervision
<i>A skill</i> you are expected to perform from the General Skill Area above:	Verify METOC data to include rawinsonde observations, mini-rawinsonde data input, and Bathythermograph (BT) messages
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for encoding and decoding the FM 63 BATHY code • Procedures for encoding and decoding the FM 35 TEMP, FM 36 TEMP SHIP, and FM 38 TEMP MOBIL codes • Procedures for entering data into the mini-rawinsonde
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 4 (NAVEDTRA 12850) • Manual on Codes, International Codes Volume I.1 Part A (WMO-No. 306) • Federal Meteorological Handbook No. 3 Rawinsonde and Pibal Observations, Appendix E (FCM-H3-1997) • DigiCORA MW11 & MARWIN MW12 User's Guide for US NAVY, Section 2, Chapter1 and Section 5, All Chapters (MW-U005en-1.3)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for encoding and decoding the BATHY, TEMP, TEMP SHIP, and TEMP MOBIL codes. You can also expect questions about what data is required to be entered and the procedures for entering it into the mini-rawinsonde prior to a rawinsonde launch.

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General AG <i>Skill Area</i>	Meteorological/Oceanographic equipment Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare environmental products to include surface observation plots, upper air observations plots, astronomical data predictions, radiological fallout (RADFO) products and information, and tactical support products
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Familiarization with the different GF MPL and TESS environmental products applications • Procedures for using the OBS PLOT, SLAP, and RADFO programs
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Geophysics Fleet Mission Program Library New Technology (GF MPL NT) Version 2.0 User's Manual, Chapter 3 (GF MPL NT 97-01BUG) • Tactical Environmental Support System (TESS) User's Guide
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for using the OBS PLOT, SLAP, and RADFO programs in GF MPL and TESS. You can also expect questions about terminology related to those programs.

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General AG <i>Skill Area</i>	Management and Supervision
<i>A skill</i> you are expected to perform from the General Skill Area above:	Input mini-rawinsonde supplemental coded data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Supplemental coded data required by the US Navy • Procedures for entering supplemental coded data into the mini-rawinsonde
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 4 (NAVEDTRA 12850) • DigiCORA MW11 & MARWIN MW12 User's Guide for US NAVY, Section 2, Chapter 1 and Section 5, All Chapters (MW-U005en-1.3)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about what supplemental data is required by the US Navy to be entered into the mini-rawinsonde and the procedures for entering it.

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General AG <i>Skill Area</i>	Meteorological/Oceanographic equipment Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Launch bathythermograph (BT) probes
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for power-up and pre-launch checks of the AN/BQH-7A • Procedures for preparing the XBT and XSV probes for launch • Procedures for launching the XBT or XSV from the MX-8577/SSQ-61 thru-hull launcher, or the LM3A handheld launcher
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Technical Manual For Bathythermograph/Sound Velocimeter AN/BQH-7A, Oceanographic Data System Surface Ship Application, Chapter 2 (NAVSEA 0910-LP-242-6900) • Aerographer's Mate Third Class, Chapter 5 (NAVEDTRA 12850)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for the power-up and pre-launch checks of the AN/BQH-7A system, and the procedures for preparing the XBT and XSV probes for launch. You can also expect questions about launching BT probes from the thru-hull launcher and the handheld launcher.

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General AG <i>Skill Area</i>	Meteorological/Oceanographic equipment Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Process satellite passes to include entering tracking information and calculating the time of the satellite passes
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for entering satellite ephemeris updates into the TESS satellite applications • Procedures for using the satellite tracking programs in the TESS • Types of satellite ephemeris updates available • Sources of satellite ephemeris updates
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 7 (NAVEDTRA 12850) • Tactical Environmental Support System (TESS) User's Guide
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for entering satellite ephemeris data into the TESS satellite applications. You can also expect questions about the procedures for using the satellite tracking programs in the TESS. You can also expect questions about the different types and sources of satellite ephemeris updates.

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General AG <i>Skill Area</i>	Meteorological/Oceanographic equipment Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Update unit communications status boards
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Types of environmental communications ashore and afloat • Procedures for indicating the status of environmental communications equipment and circuits
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 8 (NAVEDTRA 12850)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the different types of environmental communications equipment and circuits, both ashore and afloat. You can also expect questions about the procedures for indicating the status of environmental communications equipment and circuits.

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General AG <i>Skill Area</i>	Meteorological/Oceanographic equipment Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform operational checks on METOC equipment
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for performing operational checks on METOC equipment
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapters 2, 4, 5, 7, and 8 (NAVEDTRA 12850) • Automated Surface Observing System User's Guide, Chapter 2 (ASOS) • CMW User Reference Manual, Version 7, Chapter 7 (CMW) • DigiCORA MW11 & MARWIN MW12 Operating Procedure, Section 2, Chapters 2 and 3 (MW-U005en-1.3) • Meteorology and Oceanography (METOC) Integrated Data Display System (MIDDS) Operator User Guide Version 2.1, Chapter 1 • Operator's Manual, Tactical Environmental Support System (TESS (3)) and Shipboard Meteorological and Oceanographic Observing System (SMOOS), Volume III, Section 3.13 (NAVELEXCEN VJO 14203-0302428A) • Surface METAR Observations User's Manual, Chapter 2 (NAVMETOCCOMINST 3141.2) • Tactical Environmental Support System (TESS) User's Guide • Technical Manual for Bathythermograph/Sound Velocimeter AN/BQH-7A, Oceanographic Data System Surface Ship Application, Chapter 2 (NAVSEA 0910-LP-242-6900)

	<ul style="list-style-type: none"> • WSR-88D Operator Handbook Principal User Processor, Volume II, Applications Terminal, Page 2-33 (WSR-88D Handbook PUP-II)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the procedures for performing operational checks on METOC equipment and computer systems and their general use. You can also expect questions about required chart annotations on METOC recording equipment to include date/time checks, time adjustments, changing charts, operation, and maintenance. The questions may be of a general nature or specific to a type of equipment.</p>

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General AG <i>Skill Area</i>	Meteorological/Oceanographic equipment Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Acquire environmental communications to include determining the proper radio receiver frequency, interpreting data transmission schedules, and tuning in radio frequencies for radio receivers
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for determining the proper radio receiver frequency • Procedures for interpreting data transmission schedules • Procedures for tuning in radio frequency for radio receivers • Sources available for environmental broadcast radio frequencies and transmission schedules
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 8 (NAVEDTRA 12850) • Selected Worldwide Marine Weather Broadcasts
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for determining the proper radio receiver frequencies and for interpreting data transmission schedules. You can also expect questions about the procedures for tuning in radio frequencies for radio receivers, the sources available for environmental broadcast radio frequencies, and transmission schedules. The questions may be of a general nature or specific to a type of equipment.

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General AG <i>Skill Area</i>	Meteorological/Oceanographic equipment Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain closed circuit television (CCTV) weathervision information displays
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for maintaining CCTV information displays
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 8 (NAVEDTRA 12850)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for updating environmental data on CCTV systems. The questions may be of a general nature or specific to a type of equipment.

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General AG <i>Skill Area</i>	Meteorological/Oceanographic equipment Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Process environmental data to include retrieving METOC data fields, identifying alternate methods of receiving data during communications outages, and retrieving and transmitting data on environmental networks
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for retrieving METOC data fields from FNMOC • Procedures for using NODDS and JMV • Procedures for using the INTERNET • Alternate methods available for retrieving data and generating products during communication outages • Procedures for retrieving and transmitting data on environmental networks
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 8 (NAVEDTRA 12850) • CMW User Reference Manual, Version 7, Chapters 4 and 5 (CMW) • Fleet Numerical Meteorological and Oceanographic Center Data Request Product (DRP) User's Manual (P-3146) • Fleet Numerical Meteorological and Oceanographic Center NODDS Manual (P-3147) • Fleet Numerical Meteorological and Oceanographic Center JMV 3.0 Manual (P-3148) • Fleet Numerical Meteorological and Oceanographic Center OPARS Manual (P-3710) • NAVMETOCCOM Policy on Internet Access and Use of Government Information Systems (NAVMETOCCOMINST 5230.3)

	<ul style="list-style-type: none"> • Operator's Manual, Tactical Environmental Support System (TESS (3)) and Shipboard Meteorological and Oceanographic Observing System (SMOOS), Volume III, Section 3.13 (NAVELEXCEN VJO 14203-0302428A) • Tactical Environmental Support System (TESS) User's Guide • Telecommunications Users Manual (NTP 3)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the procedures for retrieving METOC data fields from Fleet Numerical Meteorology and Oceanography Center (FNMOC), alternate methods for retrieving data, and generating products during communication outages. You can also expect questions about the procedures for retrieving and transmitting data on environmental networks.</p>

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General AG <i>Skill Area</i>	Meteorological/Oceanographic equipment Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Operate pilot to metro service (PMSV)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for decoding the CONUS, OCONUS, and shipboard METAR observations and TAFs • Procedures for operating the PMSV • Procedures for initiating contact with an aircraft • Procedures for recording PIREP information • Proper military radio protocol • Proper phonetic pronunciation for numbers and letters • Security requirements for providing ship observations and TAFs
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerodrome Forecast (TAF) Code (NAVMETOCCOMINST 3143.1) • Aerographer's Mate Third Class, Chapter 8 (NAVEDTRA 12850) • Procedures Governing Pilot Weather Reports (NAVMETOCCOMINST 3142.1) • Surface METAR Observations User's Manual, Chapter 9 (NAVMETOCCOMINST 3141.2) • Manual on Codes, International Codes Volume I.1, Part A (WMO-No. 306) • WSR-88D Operator Handbook Principal User Processor, Volume I, Graphic Tablet (WSR-88D Handbook PUP-I)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the procedures for operating the PMSV, and providing the CONUS, OCONUS, and shipboard METAR observations and TAFs to aircraft. You can also expect questions about the procedures for initiating contact with an aircraft, recording PIREP information, proper military radio protocol, and the phonetic pronunciation for numbers and letters. You can also expect questions about the procedures for the security requirements for providing ship observations and TAFs over the unsecure PMSV.</p>
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Part 2

Advancement Handbook for AG2

Advancement Handbook for AG2

General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Provide briefs on METOC elements and products to include runway conditions, Search and Rescue (SAR) area environmental conditions, aircraft icing conditions, ditch heading and altimeter settings, radar summary charts, flight environmental conditions, seasonal METOC data, destination weather forecasts, Airway Meteorological (AIRMET) and Significant Meteorological (SIGMET) bulletins, Horizontal Weather Depiction (HWD) data, weather features on meteorological synoptic scale charts, non-acoustic methods of submarine detection, pilot reports (PIREPS), and climatological conditions and summaries
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Techniques for briefing METOC elements and products • Procedures for preparing METOC briefs • Procedures for decoding runway condition data, aircraft icing conditions data, PIREPS, and destination weather forecasts • Information contained on ditch heading and altimeter setting charts, radar summary charts, and HWD charts • Procedures for interpreting SAR environmental conditions, flight environmental conditions, and AIRMET and SIGMET bulletins • Procedures for interpreting climatological data • Procedures for interpreting non-acoustic methods of submarine detection

<p><i>References</i> you should study to gain the knowledge you need to perform this skill:</p>	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapters 3, 4, 5, and 6 (NAVEDTRA 12850) • Aerodrome Forecast (TAF) Code (NAVMETOC COMINST 3143.1) • Procedures Governing Flight Weather Briefings and Preparing DD Form 175-1 and U.S. Navy Flight Forecast Folder (NAVMETOC COMINST 3140.14) • Procedures Governing Pilot Weather Reports (NAVMETOC COMINST 3142.1)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the techniques for briefing METOC elements and products and the procedures for preparing a METOC brief. You can also expect questions about the procedures for decoding runway condition data, aircraft icing conditions data, and destination weather forecasts. You can also expect questions about the information contained on ditch heading and altimeter setting charts, radar summary charts, and HWD charts. You can also expect questions about the procedures for interpreting SAR environmental conditions, flight environmental conditions, AIRMET and SIGMET bulletins, climatological data, and non-acoustic methods of submarine detection.</p>

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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Analyze satellite imagery to include location of the jet stream, visibility restriction data, and meteorological and non-meteorological data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for locating the jet stream on satellite imagery • Procedures for identifying types of air pollution on satellite imagery that restrict visibility • Procedures for identifying meteorological and non-meteorological features on satellite imagery
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Meteorology Today, an Introduction to Weather, Climate, and the Environment, Fourth Edition, C. Donald Ahrens, Chapter 7 (METOC 50-1T-9605) • Basic Satellite Imagery Interpretation (METOC 50-1T-9601) • A Workbook on Tropical Clouds and Cloud Systems Observed in Satellite Imagery, Volume 1, Chapters 3, 4, 5, and 6 (METOC 50-1T-9610)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for locating the jet stream on satellite imagery and identifying the different types of air pollution that restrict visibility. You can also expect questions about the procedures for identifying both meteorological and non-meteorological features on satellite imagery.

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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Analyze electromagnetic products and information to include platform or group radar detection vulnerability and surface search radar range
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for analyzing electromagnetic products and information produced on TESS and GFMPL NT • Terminology related to atmospheric refraction
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Atmospheric Refraction (METOC 50-1T-9602) • Effective Use of the Electromagnetic Products of TESS and IREPS, Chapters, 11 through 19 (NOSC Technical Document 1369) • Geophysics Fleet Mission Program Library New Technology (GFMPL NT) Version 2.0 User's Manual, Chapters 2 and 3 (GFMPL NT 97-01BUG) • Tactical Environmental Support System (TESS) User's Guide, Chapter 4
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for analyzing electromagnetic products and information produced on TESS and GFMPL NT. You can also expect questions about the terminology related to atmospheric refraction.

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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Analyze acoustic products and information to include sensor performance prediction, propagation loss, sound speed profile diagram data, ray trace diagram feature data, and bathythermograph (BT) report message data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for analyzing acoustic products and information produced on TESS and GF MPL NT • Effects of temperature, pressure, and salinity on sound speed • Basic sound ray patterns and their attendant temperature and sound speed profiles • BATHY code • Terminology related to acoustics
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Acoustics and Sound Ray Theory (METOC 60-1T-9602) • Aerographer's Mate Second Class, Volume 2, Chapter 2 (NAVEDTRA 10371) • Evaluating and Encoding Bathythermograph (BT) Data (METOC 60-1T-9701) • Fleet Oceanographic and Acoustic Reference Manual, Chapters 1, 2, 3, 6, and 7 (RP 33) • Geophysics Fleet Mission Program Library New Technology (GF MPL NT) Version 2.0 User's Manual, Chapters 2 and 3 (GF MPL NT 97-01BUG) • Tactical Environmental Support System (TESS) User's Guide, Volume 2, Chapter 4

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the procedures for analyzing acoustic products and information produced on TESS and GFMPL NT. You can also expect questions about the effects of temperature, pressure, and salinity on sound speed, the basic sound ray patterns, and their attendant temperature and sound speed profiles. You can also expect questions about interpreting the BATHY code and terminology related to acoustics.</p>
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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Analyze constant pressure products and information including jet stream position
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Standard plotting model for constant-pressure level data • Procedures for analyzing constant-pressure charts • Procedures for recognizing and resolving erroneous reports • Procedures for extrapolating upper-air data from surface reports • Procedures for drawing isopleths for meteorological elements such as heights, temperatures, and wind speeds • Procedures for deriving upper-air information from satellite pictures • Defining parameters of a Jet stream • Sources for obtaining constant-pressure products and data
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 9 (NAVEDTRA 12850) • Aerographer's Mate Second Class, Volume 1, Chapter 8 (NAVEDTRA 10370) • Fleet Numerical Meteorological and Oceanographic Center Products Manual, Chapter 2 (P-3140) • Meteorology Today, an Introduction to Weather, Climate, and the Environment, Fourth Edition, C. Donald Ahrens, Chapters 10, 11, and 12 (METOC 50-1T-9605) • National Weather Service Forecasting Handbook No. 1, Part 2 – Facsimile Products (FH1)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the standard plotting model for constant-pressure level data, the procedures for analyzing constant-pressure charts, and recognizing and resolving erroneous reports. You can also expect questions about the procedures for extrapolating upper-air data from surface reports and drawing isopleths for various meteorological elements such as heights, temperatures, and wind speeds. You can also expect questions about the procedures for deriving upper-air information from satellite pictures, the defining parameters of a jet stream, and sources for obtaining constant-pressure products and data.</p>
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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Analyze oceanographic products and information to include Ocean fronts and eddies, frontal boundary data, Sea Surface Temperature (SST), sea and swell wave direction, period and height data, combined sea height data, and sea height chart fetch area data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for analyzing wave and swell-height data and fetch area • Procedures for analyzing SST data • Procedures for analyzing layer-depth data • Procedures for identifying oceanographic features in satellite imagery • Procedures for identifying oceanographic features from an SST analysis • Oceanographic products available • Terminology related to oceanographic analysis and products
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Second Class, Volume 2, Chapters 1 and 3 (NAVEDTRA 10371) • Fleet Numerical Meteorological and Oceanographic Center Products Manual, Chapter 2 (P-3140) • Fleet Oceanographic and Acoustic Reference Manual, Chapter 6 (RP 33)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the procedures for analyzing wave and swell-height data, fetch area data, SST data, and layer-depth data. You can also expect questions about the procedures for identifying oceanographic features from satellite imagery and SST analysis. You can also expect questions about the oceanographic products available and the terminology related to oceanographic analysis and products</p>
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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Analyze meteorological products and information to include surface and upper air synoptic scale charts, air mass feature data, thickness data, ship and surface synoptic data, fronts, pressure centers, troughs, ridges, tropical features, streamline chart data, and isallobaric tendency data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for performing an upper air and surface synoptic scale analysis to include extrapolating upper air data from surface reports and recognizing and correcting erroneous reports • Application and interpretation of plotted upper air and surface data • Procedures for drawing isobars and isopleths • Procedures for locating upper air and surface synoptic scale features on analyzed charts • Procedures for identifying synoptic scale meteorological features in satellite imagery • Procedures for labeling upper air and surface analysis charts • Procedures for depicting, analyzing, and determining the movement of air masses, precipitation, and isallobars • General principles of tropical analysis including methodology, procedures, and features
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • A Workbook On Tropical Clouds and Cloud Systems Observed in Satellite Imagery, Volume I (METOC 50-1T-9610) • A Workbook On Tropical Clouds and Cloud Systems Observed in Satellite Imagery, Volume II (METOC 50-1T-9611)

	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 9 (NAVEDTRA 12850) • Aerographer's Mate Second Class, Volume 1, Chapters 7, 8, 9, and 10 (NAVEDTRA 10370) • Basic Satellite Imagery Interpretation (METOC 50-1T-9601) • Basic Surface Analysis (METOC 50-1T-9603) • Encoding, Decoding, and Plotting the Synoptic Report (METOC 50-1T-9606) • Introduction to Forecasting, Volume 2, Chapters 2-5 through 2-10 (METOC 50-1P-0002) • Tropical Streamline Analysis (METOC 50-1T-9607) • Tropical Synoptic Models (METOC 50-1T-9604)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the procedures for performing an upper air and surface synoptic scale analysis to include extrapolating upper air data from surface reports and recognizing and correcting erroneous reports. You can also expect questions about the application of plotted upper air and surface data used in analysis, the procedures for drawing isobars and isopleths, and the procedures for locating upper air and surface synoptic scale features. You can also expect questions about the procedures for identifying synoptic scale meteorological features in satellite imagery, labeling upper air and surface analysis charts, and depicting and analyzing movement, air masses, precipitation, vision, and isallobars. You can also expect questions about the general principles of tropical analysis including methodology, procedures, and features</p>

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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare climatological summaries and reports
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Terms used to express climatic elements and the methods used to derive those terms • Climatic zones and types as they relate to classification of climate • Controlling factors that affect climate • Types of weather and climate of the oceans and continents • Climatological <i>References</i> and services available
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Second Class, Volume 1, Chapter 6 (NAVEDTRA 10370) • United States Navy Meteorological & Oceanographic Support System Manual, Chapter 7 (NAVMETOC COMINST 3140.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the terms used to express climatic elements and the methods used to derive those terms. You can also expect questions about the different climatic zones and types as they relate to the classification of climate. You can also expect questions about the controlling factors that affect climate, the various types of weather and climate of the oceans and continents, and the climatological <i>References</i> and services that are available for preparing summaries and reports.

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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Verify Optimum Path Aircraft Routing System (OPARS) data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Information presented in the OPARS computer flight plan (CFP) • OPARS CFP formats • Interpretation of the en route data
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Second Class, Volume 2, Chapter 4 (NAVEDTRA 10371) • Fleet Numerical Meteorological and Oceanographic Center OPARS Manual, Section 5 (P-3710)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the information presented in the OPARS computer flight plan (CFP) and the different OPARS CFP formats available. You can also expect questions about the en route data.

Advancement Handbook for AG2

General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Interpret computer generated METOC products
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Computer generated METOC products available • Interpretation of computer generated METOC products
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Effective Use of the Electromagnetic Products of TESS and IREPS, Chapters 8 through 19, (NOSC Technical Document 1369) • Fleet Numerical Meteorological and Oceanographic Center NODDS Manual (P-3147) • Fleet Numerical Meteorological and Oceanographic Center JMV 3.0 Manual (P-3148) • Fleet Numerical Meteorological and Oceanographic Center Products Manual, Chapter 2 (P-3140) • Geophysics Fleet Mission Program Library New Technology, (GF MPL NT) Version 2.0 User's Manual, Chapters 2 and 3 (GF MPL NT 97-01BUG) • National Weather Service Forecasting Handbook No. 1, Part 2 – Facsimile Products (FH1) • Tactical Environmental Support System (TESS) User's Guide
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the different computer generated METOC products available and the interpretation of those products

Advancement Handbook for AG2

General AG <i>Skill Area</i>	Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain METOC administrative data to include updating files and records and writing monthly records-transmittal reports
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Terms associated with the maintenance of METOC files, records, directives, publications, and charts • Organization of files and directives • Maintenance of files, records, and publications • Procedures for submitting meteorological records transmittal forms
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Second Class, Volume 2, Chapter 7 (NAVEDTRA 10371) • United States Navy Meteorological & Oceanographic Support System Manual, Chapter 5 (NAVMETOCCOMINST 3140.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the terms associated with the maintenance of METOC files, records, directives, publications, and charts. You can also expect questions about the organization of files and directives, the maintenance required on files, records, and publications, and the procedures for submitting meteorological records transmittal forms.

Part 3

Advancement Handbook for AG1

Advancement Handbook for AG1

General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Forecast meteorological phenomena to include air temperature and dew points; apparent temperatures (heat stress index); wind chill temperatures; severe weather activity areas; destructive weather, ship and aircraft icing; aircraft ditch heading and altimeter settings; jet stream position; low level wind shear; wind speeds and wind direction; takeoff environmental conditions; aircraft enroute environmental conditions; atmospheric profile wind changes; cloud types, amounts, and layer heights; precipitation types, intensities, and duration; precipitation effects; visibility obstructions; turbulence types, intensities, and levels; frontal positions and movements; pressure systems and movements; and freezing levels
Knowledge you should have to perform this skill:	<ul style="list-style-type: none"> • Rules associated with identifying and forecasting divergence, convergence, and wind shear • Rules associated with absolute and relative vorticity • Features on surface and upper level charts • Products available for preparing surface and upper level prognostic charts • Procedures for identifying features on satellite imagery and upper air charts that are conducive to the formation of pressure systems • Forecasting techniques for the movement and changes in the intensity of fronts and pressure systems • Forecasting techniques for the formation, type, and change in intensity of meteorological elements such as fog, clouds, precipitation, and temperature

	<ul style="list-style-type: none"> • Forecasting techniques for the formation, movement, and change in intensity of hazardous or destructive weather such as thunderstorms, icing, turbulence, wind shear, wind warnings, and tropical warnings • Forecasting techniques for aviation parameters such as ditch headings, altimeter settings, and density and pressure altitude
<p><i>References you should study to gain the knowledge you need to perform this skill:</i></p>	<ul style="list-style-type: none"> • A Workbook On Tropical Clouds and Cloud Systems Observed in Satellite Imagery, Volume I, Chapters 3 through 6 (METOC 50-1T-9610) • A Workbook On Tropical Clouds and Cloud Systems Observed in Satellite Imagery, Volume II, All Chapters (METOC 50-1T-9611) • Aerographer's Mate Second Class, Volume 2, Chapter 6 (NAVEDTRA 10371) • Aerographer's Mate 1 & C, Chapters 1 through 5, 10 and 11 (NAVEDTRA 12853) • Basic Satellite Imagery Interpretation (METOC 50-1T-9601) • National Weather Service Forecasting Handbook No. 1, Part 2 – Facsimile Products (FH1) • Fleet Numerical Meteorological and Oceanographic Center NODDS Manual, All Chapters (P-3147) • Fleet Numerical Meteorological and Oceanographic Center JMV 3.0 Manual, All Chapters (P-3148) • Fleet Numerical Meteorological and Oceanographic Center Products Manual, Chapter 2 (P-3140) • Geophysics Fleet Mission Program Library New Technology (GFMPL NT) Version 2.0 User's Manual, Chapters 2 and 3 (GFMPL NT 97-01BUG) • GOES Tap Imaging System (GTIS) • Introduction to Forecasting, Volumes 2, Chapters 3 and 5 (METOC 50-1P-0002)

	<ul style="list-style-type: none"> • Meteorology and Oceanography (METOC) Integrated Data Display System (MIDDS) Operator User Guide Version 2.1 • Meteorology Today, an Introduction to Weather, Climate, and the Environment, Fourth Edition, C. Donald Ahrens, Chapters 4 through 17 (METOC 50-1T-9605) • National Weather Service Forecasting Handbook No. 1, Part 2 – Facsimile Products (FH1) • NAVMETOCCOM Policy on Internet Access and Use of Government Information Systems (NAVMETOCCOMINST 5230.3) • Tactical Environmental Support System (TESS) User's Guide, Chapter 4 • The Use of the Skew T, Log P Diagram in Analysis and Forecasting, Chapters 4 through 8 (NAVAIR 50-1P-5) • Tropical Synoptic Models (METOC 50-1T-9604) • United States Navy Meteorological & Oceanographic Support System Manual, Chapter 2 (NAVMETOCCOMINST 3140.1) • Warnings and Conditions of Readiness Concerning Hazardous or Destructive Weather Phenomena (OPNAVINST 3140.24) • WSR-88D Operator Handbook Principal User Processor, Volume I, Graphic Tablet (WSR-88D Handbook PUP-I) • WSR-88D Operator Handbook Principal User Processor, Volume II, Applications Terminal (WSR-88D Handbook PUP-II)
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<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the rules associated with identifying and forecasting divergence, convergence, and wind shear. You can also expect questions about the rules associated with absolute and relative vorticity, the features on surface and upper level charts, and the products available for preparing surface and upper level prognostic charts. You can also expect questions about the procedures for identifying features on satellite imagery and upper air charts that are conducive to the formation of pressure systems. You can also expect questions about the forecasting techniques for the movement and changes in intensity of fronts and pressure systems; the formation, type, and change in intensity of meteorological elements such as fog, clouds, precipitation, and temperature; the identification of moisture features aloft and their significance to forecasting; the formation, movement, and change in intensity of destructive weather such as thunderstorms, icing, turbulence, wind shear, wind warnings, and tropical warnings; and the forecasting techniques for aviation parameters such as ditch headings, altimeter settings, and density and pressure altitude</p>
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Advancement Handbook for AG1

General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Forecast oceanographic phenomena to include Sea Surface Temperature (SST); Modified Surf Index (MSI); wave and combined sea direction; wave period, and height; littoral currents, speed, and direction; sound channel and sonic layer depths; cutoff frequencies; and ambient noise effects
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Basic principles of ocean sea and swell waves, acoustics and sound ray theory, and surf forecasting • Properties and characteristics of ocean waves, surf, and tides • Procedures for forecasting ocean waves, surf, tides, and SST • Types and classifications of currents, ocean waves, ocean fronts and eddies, surf, and tides • Procedures for calculating the MSI • Terms related to ocean waves, surf, currents, SST, tides, ocean fronts and eddies, surf, and acoustics • Oceanographic data and product sources • Applications, limitations, and assumptions of oceanographic and acoustic prediction products
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Second Class, Volume 2, Chapters 1 through 4 and 6 (NAVEDTRA 10371) • Aerographer's Mate 1 & C, Chapters 6, 8, and 9 (NAVEDTRA 12853) • Basic Satellite Imagery Interpretation (METOC 50-1T-9601) • COMNAVSURFPAC/ COMNAVSURFLANTINST Joint Surf Manual, Chapter 11 (CNSPINST/CNSLINST 3840.1)

	<ul style="list-style-type: none"> • Fleet Numerical Meteorological and Oceanographic Center NODDS Manual, All Chapters (P-3147) • Fleet Numerical Meteorological and Oceanographic Center Products Manual, Chapter 2 (P-3140) • Fleet Oceanographic and Acoustic Reference Manual, Chapters 1 through 4 and 8 through 10 (RP 33) • Geophysics Fleet Mission Program Library New Technology (GFMPL NT) Version 2.0 User's Manual, Chapters 2 and 3 (GFMPL NT 97-01BUG) • National Weather Service Forecasting Handbook No. 1, Part 2 – Facsimile Products (FH1) • NAVMETOCCOM Policy on Internet Access and Use of Government Information Systems (NAVMETOCCOMINST 5230.3) • Oceanography, Sixth Edition, Chapters 5 and 6 (METOC 60-1T-9601) • Operational Oceanography, Acoustics and Sound Ray Theory (METOC 60-1T-9602) • United States Navy Meteorological & Oceanographic Support System Manual, Chapters 2 and 7 (NAVMETOCCOMINST 3140.1)
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<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the principles of ocean waves, acoustic and sound ray theory, and surf forecasting. You can also expect questions about properties and characteristics of ocean waves, surf, and tides. You can also expect questions about the types and classifications of currents, ocean waves, fronts and eddies, surf, and tides. You can also expect questions about the procedures for forecasting ocean waves, surf, SST, and tides. You can also expect questions about the procedures for calculating the MSI and the terms related to ocean waves, surf, fronts and eddies, tides, and acoustics. You can also expect questions about oceanographic data and product sources and the applications, limitations, and assumptions of oceanographic and acoustic prediction products.</p>
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Advancement Handbook for AG1

General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Analyze meteorological data to include aviation surface reports, in-flight weather advisories, severe weather plots, tropical cyclone intensification changes, destructive weather phenomena, meteorological chart severe weather features, tropical cyclogenesis, satellite imagery ocean front and eddy data, positive vorticity advection, turbulence indication, ice and snow location, water vapor channel data, meteorological and non-meteorological features from Doppler Radar, Doppler radar upper level wind speed and direction, aircraft icing products and information, low level jet stream data, atmospheric turbulence data, and squall line data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Interpretation of aviation surface reports and severe weather plots • Interpretation of weather advisories such as in-flight weather advisories, tropical cyclone advisories, and other hazardous weather advisories • Charts, products, and information available for identifying the formation or changes in intensity of tropical cyclones and other destructive weather phenomena • Recognition of meteorological and oceanographic features on satellite imagery • Recognition of meteorological and non-meteorological features on Doppler radar
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • A Workbook On Tropical Clouds and Cloud Systems Observed in Satellite Imagery, Volume I, Chapters 3 through 6 (METOC 50-1T-9610)

	<ul style="list-style-type: none"> • A Workbook On Tropical Clouds and Cloud Systems Observed in Satellite Imagery, Volume II, All Chapters (METOC 50-1T-9611) • Aerographer's Mate Second Class, Volume 1, Chapters 7 through 9 (NAVEDTRA 10370) • Aerographer's Mate Second Class, Volume 2, Chapters 1 and 3 (NAVEDTRA 10371) • Aerographer's Mate 1 & C Chapters 1 through 5 and 9 through 11 (NAVEDTRA 12853) • Basic Satellite Imagery Interpretation (METOC 50-1T-9601) • Fleet Oceanographic and Acoustic Reference Manual, Chapter 5 (RP 33) • Introduction to Forecasting, Volume 2 (METOC 50-1P-0002) • Meteorology Today, an Introduction to Weather, Climate, and the Environment, Fourth Edition, C. Donald Ahrens, Chapters 16 and 17 (METOC 50-1T-9605) • The Use of the Skew T, Log P Diagram in Analysis and Forecasting, Chapters 4 through 8 (NAVAIR 50-1P-5) • Tropical Synoptic Models (METOC 50-1T-9604)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the interpretation of aviation surface reports and severe weather plots. You can also expect questions about the interpretation of weather advisories to include in-flight, tropical cyclones, and other hazardous weather advisories. You can also expect questions about the charts, products, and information available for identifying the formation or changes in intensity of tropical cyclones and other destructive weather phenomena. You can also expect questions about the recognition of meteorological and oceanographic features on satellite imagery and meteorological and non-meteorological features on Doppler radar.</p>

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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Draft meteorological warnings, advisories, and forecasts to include severe weather, snow, and operational area and aviation forecasts
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Recognition of conditions conducive to the formation of hazardous weather • Terms related to hazardous weather warnings, advisories, and forecasts • Content of warnings, advisories, and forecasts • Procedures for drafting warnings, advisories, and forecasts
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • A Workbook On Tropical Clouds and Cloud Systems Observed in Satellite Imagery, Volume I, Chapters 3 through 6 (METOC 50-1T-9610) • A Workbook On Tropical Clouds and Cloud Systems Observed in Satellite Imagery, Volume II, All Chapters (METOC 50-1T-9611) • Aerodrome Forecast (TAF) Code (NAVMETOCCOMINST 3143.1) • Aerographer's Mate 1 & C, Chapters 5, 10, and 11 (NAVEDTRA 12853) • Meteorology Today, an Introduction to Weather, Climate, and the Environment, Fourth Edition, C. Donald Ahrens, Chapters 15 through 17 (METOC 50-1T-9605)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the recognition of conditions that are conducive to the formation of hazardous weather and the related terminology. You can also expect questions about the content of warnings, advisories, and forecasts, and the procedures for drafting them.</p>
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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Verify METOC data and information to include severe weather warnings and advisories and prognostic surface charts
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Recognition of conditions conducive to the formation of hazardous weather • Terms related to hazardous weather warnings, advisories, and forecasts • Content of warnings, advisories, and forecasts • Content of prognostic surface charts
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • A Workbook On Tropical Clouds and Cloud Systems Observed in Satellite Imagery, Volume I, Chapters 3 through 6 (METOC 50-1T-9610) • A Workbook On Tropical Clouds and Cloud Systems Observed in Satellite Imagery, Volume II, All Chapters (METOC 50-1T-9611) • Aerodrome Forecast (TAF) Code (NAVMETOCCOMINST 3143.1) • Aerographer's Mate 1 & C, Chapters 5, 10, and 11 (NAVEDTRA 12853) • Basic Satellite Imagery Interpretation (METOC 50-1T-9601) • Tropical Synoptic Models (METOC 50-1T-9604)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the recognition of conditions conducive to the formation of hazardous weather and related terms. You can also expect questions about the content of warnings, advisories, forecasts, and prognostic surface charts

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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Brief METOC information to include tropical cyclone storm surge areas, conditions of readiness recommendations, evasive action and sortie briefs, radar observation reports, predeployment and long range planning climatological briefs, navigation briefs, pre-sail briefs, cyclic operations flight forecast briefs, slant range visibility, bingo field conditions, and warfare operations briefs
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Sources for tropical cyclone products and information • Sources for climatological products and information • Content of the various METOC briefs to include tropical, aviation, operational, and climatological briefs • Procedures and techniques for conducting METOC briefs
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Second Class, Volume 2, Chapter 5 (NAVEDTRA 10371) • Aerographer's Mate 1 & C, Chapter 13 (NAVEDTRA 12853) • Fleet Numerical Meteorological and Oceanographic Center Products Manual, Chapter 2 (P-3140) • Geophysics Fleet Mission Program Library New Technology (GF MPL NT) Version 2.0 User's Manual, Chapters 2 and 3 (GF MPL NT 97-01BUG)

	<ul style="list-style-type: none"> • Procedures Governing Flight Weather Briefings and Preparing DD Form 175-1 and U.S. Navy Flight Forecast Folder (NAVMETOCCOMINST 3140.14) • Tactical Environmental Support System (TESS) User's Guide, Chapter 4
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the sources for tropical, aviation, operational, and climatological products and information. You can also expect questions about the content of the various METOC briefs such as tropical, aviation, operational, and climatological briefs. You can also expect questions about the procedures and techniques for conducting METOC briefs.</p>

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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Brief tactical information to include platform or battle group vulnerabilities; environmental effects on weapons, sensors, and platforms; and electro-optical sensor, weapon, and communication performance
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Sources for METOC tactical decision aids, products, and information • Content of the various METOC tactical briefs to include Air Warfare (AW), Surface Warfare (SUW), Strike Warfare (STW), Undersea Warfare (USW), Mine Warfare (MIW), Amphibious Warfare (AMW), Special Operations Forces (SOF), and Naval Special Warfare (NSW) briefs • Procedures and techniques for conducting METOC tactical briefs
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Second Class, Volume 2, Chapter 5 (NAVEDTRA 10371) • Aerographer's Mate 1 & C, Chapter 13 (NAVEDTRA 12853) • Geophysics Fleet Mission Program Library New Technology (GFMPL NT) Version 2.0 User's Manual, Chapters 2 and 3 (GFMPL NT 97-01BUG) • Tactical Environmental Support System (TESS) User's Guide, Chapter 4

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the sources for METOC tactical decision aids, products and information, and the content of the various METOC tactical briefs to include AW, SUW, STW, USW, MIW, AMW, SOF, and NSW briefs. You can also expect questions about the procedures and techniques for conducting METOC tactical briefs</p>
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Advancement Handbook for AG1

General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Forecast meteorological tactical parameters to include electromagnetic (EM) propagation conditions, effective chemical and radiological downwind data, environmental effects on weapons, sensors, and platforms, and ballistic winds and densities
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Basic principles of EM propagation and ballistic winds and densities • Procedures for forecasting EM propagation, effective chemical and radiological downwind data, and ballistic winds and densities • Environmental effects on weapons, sensors, and platform performance • Procedures running EM, effective chemical and radiological downwind data, and ballistic wind and density applications on TESS and GFMPL NT • Terms related to EM propagation, ballistic winds and densities, and effective chemical and radiological downwind data
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Second Class, Volume 2, Chapter 6 (NAVEDTRA 10371) • Aerographer's Mate 1 & C, Chapter 7 (NAVEDTRA 12853) • Atmospheric Refraction (METOC 50-1T-9602) • Effective Use of the Electromagnetic Products of TESS and IREPS, Chapter 4 (NOSC Technical Document 1369) • Geophysics Fleet Mission Program Library New Technology (GFMPL NT) Version 2.0 User's Manual, Chapters 2 and 3 (GFMPL NT 97-01BUG)

	<ul style="list-style-type: none"> • Reporting Nuclear Detonations, Biological and Chemical Attacks, and Predicting and Warning of Associated Hazards and Hazard Areas, Chapters 6, 7, and 9 (ATP 45) • Tactical Environmental Support System (TESS) User's Guide, Chapter 4
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the basic principles of EM propagation and ballistic winds and densities. You can also expect questions about the procedures for forecasting EM propagation; effective chemical and radiological downwind data; ballistic winds and densities; and the environmental effects on weapons, sensors, and platform performance. You can also expect questions about the procedures for running EM, effective chemical and radiological downwind data, and ballistic winds and densities applications on TESS and GFMPL NT. You can also expect questions about the terms related to EM propagation, ballistic winds and densities, and effective chemical and radiological downwind data</p>

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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Analyze METOC tactical products and information to include electronic countermeasure (ECM) effectiveness, forward-looking infrared (FLIR), Tomahawk Land Attack Missile TLAM support, ocean current data, alpha index data, bottom topography and characteristic data, beach profile data, and search and rescue (SAR)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for analyzing METOC tactical products and information for accuracy, effectiveness, and usefulness • Sources of METOC products and information • Terms related to METOC tactical products and information
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate 1 & C, Chapters 7 and 8 (NAVEDTRA 12853) • Effective Use of the Electromagnetic Products of TESS and IREPS, Chapters 8 through 19 (NOSC Technical Document 1369) • Geophysics Fleet Mission Program Library New Technology (GF MPL NT) Version 2.0 User's Manual, Chapters 2 and 3 (GF MPL NT 97-01BUG) • Tactical Environmental Support System (TESS) User's Guide, Chapter 4

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the procedures for analyzing METOC tactical products and information for accuracy, effectiveness, and usefulness. You can also expect questions about the sources of METOC products and information and the related terminology.</p>
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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Compute wind shear gradients
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Characteristics associated with wind shear • Types of wind shear • Procedures for computing wind shear gradients
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Second Class, Volume 2, Chapter 6 (NAVEDTRA 10371) • Aerographer's Mate 1 & C, Chapters 7 and 8 (NAVEDTRA 12853)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the characteristics associated with wind shear, the different types of wind shear, and the procedures for computing wind shear gradients.

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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Evaluate METOC parameters to include M and N gradients, ocean front and eddy effects, best evasion and detection depths, warfare METOC effects on air warfare (AW), surface warfare (SUW), amphibious warfare (AMW), strike warfare (STW), mine warfare (MIW), and special operations warfare (SOW), atmosphere circulation data, and METOC forecasting model strengths and weaknesses
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Sources for METOC data, products and information • Critical weather thresholds for AW, SUW, STW, USW, MIW, AMW, and SOF operations • Procedures and techniques for evaluating weather data and the effects of weather on operations • Forecast models and their strengths and weaknesses
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Second Class, Volume 2, Chapters 4 and 5 (NAVEDTRA 10371) • Aerographer's Mate 1 & C, Chapters, 9 (NAVEDTRA 12853) • Atmospheric Refraction (METOC 50-1T-9602) • Effective Use of the Electromagnetic Products of TESS and IREPS, Chapter 4 (NOSC Technical Document 1369) • Fleet Numerical Meteorological and Oceanographic Center Products Manual, Chapter 3 (P-3140) • Fleet Oceanographic and Acoustic Reference Manual, Chapters 2 and 5, through 7, (RP 33)

	<ul style="list-style-type: none"> • Geophysics Fleet Mission Program Library New Technology (GFMPL NT) Version 2.0 User's Manual, Chapters 2 and 3 (GFMPL NT 97-01BUG) • Introduction to Forecasting, Volume 3 (METOC 50-1P-0002) • National Weather Service Forecasting Handbook No. 1, Part 2 – Facsimile Products (FH1) • Operational Oceanography, Acoustics and Sound Ray Theory (METOC 60-1T-9602) • Operational Oceanography, Introduction to Antisubmarine Warfare Sensors and Platforms (METOC 60-1T-9603) • Tactical Environmental Support System (TESS) User's Guide, Chapter 4
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the sources for METOC data, products and information and the critical weather thresholds for AW, SUW, STW, USW, MIW, AMW, and SOF operations. You can also expect questions about the procedures and techniques for evaluating weather data and the effects of weather on operations. You can also expect questions about the strengths and weaknesses of the forecast models.</p>

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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Prepare METOC products to include prognostic surface charts, ship's points of intended movement environmental conditions (WEAX), acoustic propagation forecasts, Horizontal Weather Depictions (HWD), and local area forecasts
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for preparing acoustic propagation forecasts, HWD charts, WEAX, and local area forecasts • Content of acoustic propagation forecasts, HWD charts, WEAX, and local area forecasts • Products available for preparing acoustic propagation forecasts, HWD charts, WEAX, and local area forecasts
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Second Class, Volume 2, Chapters 4 and 5 (NAVEDTRA 10371) • Aerographer's Mate 1 & C, Chapter 9 (NAVEDTRA 12853) • Fleet Oceanographic and Acoustic Reference Manual, All Chapters (RP 33) • Geophysics Fleet Mission Program Library New Technology (GFMPL NT) Version 2.0 User's Manual, Chapters 2 and 3 (GFMPL NT 97-01BUG) • National Weather Service Forecasting Handbook No. 1, Part 2 – Facsimile Products (FH1) • Procedures Governing Flight Weather Briefings and Preparing DD Form 175-1 and U.S. Navy Flight Forecast Folder (NAVMETOCOMINST 3140.14) • Tactical Environmental Support System (TESS) User's Guide, Chapter 4

	<ul style="list-style-type: none"> • The Use of the Skew T, Log P Diagram in Analysis and Forecasting, Chapters 5 through 8 (NAVAIR 50-1P-5) • United States Navy Meteorological & Oceanographic Support System Manual, Chapter 3 (NAVMETOCCOMINST 3140.1)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the procedures for preparing acoustic propagation forecasts, HWD charts, WEAX, and local area forecasts and what data each forecast contains. You can also expect questions about the products available for preparing acoustic propagation forecasts, HWD charts, WEAX, and local area forecasts.</p>

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General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Amend Terminal Aerodrome Forecast (TAF)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Interpretation of the TAF code • Amendment criteria for the TAF • Procedures for amending the TAF
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerodrome Forecast (TAF) Code (NAVMETOC COMINST 3143.1) • Aerographer's Mate Second Class, Volume 2, Chapter 4 (NAVEDTRA 10371)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the interpretation of the TAF code, the amendment criteria, and the procedures for amending it.

Advancement Handbook for AG1

General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Identify visual meteorological conditions (VMC), instrument meteorological conditions (IMC), and runway conditions
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Meteorological criteria for VMC and IMC runway conditions • Interpretation of the METAR and terminal aerodrome forecast (TAF) codes
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • NATOPS General Flight and Operating Instructions, Chapter 5, (OPNAVINST 3710.7)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the meteorological criteria for VMC and IMC runway conditions and interpretation of the METAR and TAF codes.

Advancement Handbook for AG1

General AG <i>Skill Area</i>	Environmental Prediction Systems and Services
A <i>skill</i> you are expected to perform from the General Skill Area above:	Determine ambient limiting speeds and breakpoint speeds
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for determining ambient limiting speeds and break point speeds • Terminology related to ambient noise
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Fleet Oceanographic and Acoustic Reference Manual, Chapter 3 and appendix E (RP 33)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for determining ambient limiting speeds, break point speeds, and related terminology.

Advancement Handbook for AG1

General AG <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Verify METOC data to include horizontal weather depiction (HWD) charts, acoustic predictions versus observed ranges, electro-optic predictions versus observed values, airway meteorological (AIRMET) and significant meteorological (SIGMET) bulletins, computer generated METOC products and information, terminal aerodrome forecasts (TAFs), flight weather folders, and local area forecasts
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for verifying HWD charts, AIRMET and SIGMET bulletins, computer generated METOC products and information, TAFs, flight weather folders, and local area forecasts • Procedures for comparing acoustic and electro-optic predictions against observed ranges • Content of HWD charts, TAFs, flight weather folders, and local area forecasts • Interpretation of AIRMET and SIGMET bulletins, computer generated METOC products and information, and TAFs • Sources of observed data used in verifying METOC products
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerodrome Forecast (TAF) Code (NAVMETOC COMINST 3143.1) • Aerographer's Mate Third Class, Chapter 9 (NAVEDTRA 12850) • Aerographer's Mate Second Class, Volume 2, Chapters 5 and 6 (NAVEDTRA 10371) • Fleet Oceanographic and Acoustic Reference Manual, Chapters 9 and 10 (RP 33)

	<ul style="list-style-type: none"> • Procedures Governing Flight Weather Briefings and Preparing DD Form 175-1 and U.S. Navy Flight Forecast Folder (NAVMETOC COMINST 3140.14)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>You can expect questions about the procedures for verifying HWD charts, AIRMET and SIGMET bulletins, computer generated METOC products and information, TAFs, flight weather folders, and local area forecasts. You can also expect questions about the sources of observed data used to verifying METOC products. You can also expect questions about the procedures for comparing acoustic and electro-optic predictions against observed ranges. You can also expect questions about the content of HWD charts, TAFs, flight weather folders, and local area forecasts. You can also expect questions about the interpretation of AIRMET and SIGMET bulletins, computer generated METOC products and information, and TAFs.</p>

Advancement Handbook for AG1

General AG <i>Skill Area</i>	Management and Supervision
<i>A skill</i> you are expected to perform from the General Skill Area above:	Interpret mapping, charting, and geodesy (MC&G) products
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for interpreting MC&G products • Terminology related to MC&G • Sources for MC&G products
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 9 (NAVEDTRA 12850)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for interpreting MC&G products and related terminology.

Advancement Handbook for AG1

General AG <i>Skill Area</i>	Meteorological/Oceanographic Equipment Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Update alert areas and threshold values
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for updating alert areas and threshold values in METOC tactical decision aides
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Geophysics Fleet Mission Program Library New Technology (GFMPL NT) Version 2.0 User's Manual, Chapters 2 and 3 (GFMPL NT 97-01BUG) • Tactical Environmental Support System (TESS) User's Guide, Chapter 4
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • You can expect questions about the procedures for updating alert areas and threshold values in METOC tactical decision aides

Advancement Handbook for AG1

General AG <i>Skill Area</i>	Meteorological/Oceanographic Equipment Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform dial up data access on WSR-88D Principal User Processors (PUP)
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none">• Procedures for performing a product dial-up request on the WSR-88D
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none">• WSR-88D Operator Handbook Principal User Processor, Volume I, Graphic Tablet, Chapter 1 (WSR-88D Handbook PUP-I)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for performing a product dial-up request on the WSR-88D

Advancement Handbook for AG1

General AG <i>Skill Area</i>	Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Review METOC directives to include METOC Operations Tasking (OPTASK) messages, fleet Operational Orders (OPORDS), and METOC equipment contingency backup plans
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for reviewing METOC directives to include METOC OPTASK, OPORDS, and equipment contingency backup plans • Interpretation of METOC OPTASK and OPORDS
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate 1 & C, Chapter 14 (NAVEDTRA 12853) • United States Navy Meteorological & Oceanographic Support System Manual (NAVMETOCCOMINST 3140.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for reviewing and interpreting the METOC OPTASK and OPORDS. You can also expect questions about METOC equipment contingency backup plans.

Part 4

Advancement Handbook for AGC

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General AG <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Maintain METOC equipment contingency backup plans to include drafting and updating
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for drafting and updating instructions, notices, and Standard Operating Procedures (SOPs) • Sources of METOC equipment and data that can be used for backup • Requirements for updating contingency backup plans
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Second Class, Volume 2, Chapter 7 (NAVEDTRA 10371) • Command Inspection Program (NAVMETOC COMINST 5040.1) • Department of the Navy Correspondence Manual, Chapters 1 through 3 (SECNAVINST 5216.5) • Department of the Navy Directives Issuance System, Chapter 4 (SECNAVINST 5215.1) • Fleet Numerical Meteorological and Oceanographic Center Products Manual, Chapter 2 (P-3140)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for drafting and updating instructions, notices, and SOPs. You can also expect questions about the requirements for updating contingency backup plans and the various sources of METOC equipment and data that are available for contingency use.

Advancement Handbook for AGC

General AG <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Establish METOC services quality control program
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Requirements for METOC services quality control programs • Procedures for establishing a METOC services quality control program
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Command Inspection Program (NAVMETOCCOMINST 5040.1) • Fleet Liaison Program (NAVMETOCCOMINST 3140.7) • Maintenance of Surface & Upper Air Observation Programs of the Naval Oceanography Command & U. S. Marine Corps (Shore Stations) (NAVOCEANCOMINST 5220.1) • Procedures for Qualification and Certification of Navy and Marine Corps Air Traffic Controllers as Tower Visibility Observers (NAVMETOCCOMINST 1500.3) • United States Navy Manual For Ship's Surface Weather Observations, Chapter 1 (NAVMETOCCOMINST 3144.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the requirements for METOC services quality control programs and the procedures for establishing one.

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General AG <i>Skill Area</i>	Management and Supervision
<i>A skill</i> you are expected to perform from the General Skill Area above:	Maintain METOC lessons learned local integration recommendations to include developing and updating
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for developing and updating lessons learned recommendations
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Oceanographic Post-Deployment Reports (NAVOCEANCOMINST 3140.23) • Aerographer's Mate 1 & C, Chapter 14 (NAVEDTRA 12853)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for developing and updating lessons learned recommendations

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General AG <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct METOC services availability briefs
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for conducting METOC briefs • METOC support services that are available to customer activities
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Second Class, Volume 2, Chapter 5 (NAVEDTRA 10371) • Aerographer's Mate 1 & C, Chapter 13 (NAVEDTRA 12853) • Fleet Numerical Meteorological and Oceanographic Center Products Manual, Chapter 2 (P-3140) • United States Navy Meteorological & Oceanographic Support System Manual (NAVMETOCCOMINST 3140.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for conducting briefs and the METOC support services that are available to customer activities.

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General AG <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Assess Movement Reports (MOVREP) and sail orders
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Interpretation of the MOVREP code and sail orders
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 9 (NAVEDTRA 12850)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the interpretation of the MOVREP code and sail orders.

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General AG <i>Skill Area</i>	Management and Supervision
A <i>skill</i> you are expected to perform from the General Skill Area above:	Assess METOC service requirements
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none">• Procedures and requirement for conducting liaison visits with customer activities
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none">• Fleet Liaison Program (NAVMETOCCOMINST 3140.7)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures and requirements for conducting liaison visits with customer activities

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General AG <i>Skill Area</i>	Management and Supervision
<i>A skill</i> you are expected to perform from the General Skill Area above:	Evaluate METOC equipment and communications requirements
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Basic and augmenting equipment allowances for METOC activities • Communications systems available for the transfer of METOC data
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Third Class, Chapter 8 (NAVEDTRA 12850) • Meteorological Equipment Management and Planning Policy, Enclosure 2 (NAVMETOCCOMINST 13950.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the basic and augmenting equipment allowances for METOC activities. You can also expect questions about the communications systems available for the transfer of METOC data

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General AG <i>Skill Area</i>	Technical Administration
<i>A skill</i> you are expected to perform from the General Skill Area above:	Draft annual meteorological station and description reports
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for completing the Station Information File (SIF), CNMOC Form 3140/1DF • Requirements for submitting a SIF
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate 1 & C, Chapter 14 (NAVEDTRA 12853) • Fleet Numerical Meteorology and Oceanography Detachment, Asheville, North Carolina (http://waves.ncdc.noaa.gov/)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for completing the Station Information File (SIF), CNMOC Form 3140/1DF and the requirements for submitting it.

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General AG <i>Skill Area</i>	Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Draft METOC OPTASK messages
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none">• Contents of a METOC OPTASK message• Procedures for drafting a METOC OPTASK message
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none">• Aerographer's Mate 1 & C, Chapters 13 and 14 (NAVEDTRA 12853)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the contents and procedures for drafting a METOC OPTASK message.

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General AG <i>Skill Area</i>	Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Review METOC support manuals
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Sources of METOC support manuals • Interpretation of information contained in METOC support manuals
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Second Class, Volume 2, Chapter 6 (NAVEDTRA 10371) • Aerographer's Mate 1 & C, Chapters 10, 13, and 14 (NAVEDTRA 12853) • Fleet Numerical Meteorological and Oceanographic Center Products Manual, Chapter 2 (P-3140) • Meteorology and Oceanography Products and Services (NAVMETOCCOMINST 3140.17) • United States Navy Meteorological & Oceanographic Support System Manual (NAVMETOCCOMINST 3140.1)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the various sources of METOC support manuals and the interpretation of the information they contain.

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General AG <i>Skill Area</i>	Technical Administration
A <i>skill</i> you are expected to perform from the General Skill Area above:	Update predeployment and long range planning climatological data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Sources of climatological data • Interpretation of climatological data • Procedures for developing and updating predeployment and long range planning climatological data
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Aerographer's Mate Second Class, Volume 2, Chapter , 6 (NAVEDTRA 10371) • Aerographer's Mate 1 & C, Chapters 10, 13, and 14 (NAVEDTRA 12853) • United States Navy Meteorological & Oceanographic Support System Manual, Chapter 7 (NAVMETOCCOMINST 3140.1) • Fleet Numerical Meteorology and Oceanography Detachment, Asheville, North Carolina (http://waves.ncdc.noaa.gov/)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the sources of climatological data and the interpretation of that data. You can also expect questions about the procedures for updating predeployment and long range planning climatological data.

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General AG <i>Skill Area</i>	Technical Administration
<i>A skill</i> you are expected to perform from the General Skill Area above:	Evaluate office support procedures for compliance with METOC technical inspection items
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Compliance requirements for METOC technical inspection items • Procedures for evaluating compliance with METOC command inspection items
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Command Inspection Program (NAVMETOCCOMINST 5040.1) • Management Control Program (NAVMETOCCOMINST 5200.3)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the compliance requirements outlined in NAVMETOCCOMINST 5040.1. You can also expect questions about the procedures for evaluating compliance with METOC command inspection items

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General AG <i>Skill Area</i>	Technical Administration
<i>A skill</i> you are expected to perform from the General Skill Area above:	Evaluate METOC MC&G requirements
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Procedures for evaluating METOC MC&G requirements • Sources for METOC MC&G data and services
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Mapping, Charting, & Geodesy Handbook, Chapters 1 and 2 (AVDEP-HDBK-12)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the procedures for evaluating METOC MC&G requirements and the sources for METOC MC&G data and services.

Appendix A

References Used in This Advancement Handbook

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
AG3	ASOS	Automated Surface Observing System User's Guide (ASOS)	Chapters 2 through 4	Note 6
	ATP 45	Reporting Nuclear Detonations, Biological and Chemical Attacks, and Predicting and Warning of Associated Hazards and Hazard Areas	Chapters 2, 6, 7, 9, and 13	Note 1
	CMW	CMW User Reference Manual, Version 7	Chapters 4, 5, and 7	Note 8
	CNSPINST/CNSLINST 3840.1	COMNAVSURFPAC/COMNAVSURFLANT INST Joint Surf Manual	Chapters 4, 5, 6, 10, and 11	Note 1
	FCM-H3-1997	Federal Meteorological Handbook No. 3 Rawinsonde and Pibal Observations	Appendix E	Note 8
	GFEMPL NT 97-01BUG	Geophysics Fleet Mission Program Library New Technology (GFEMPL NT) Version 2.0 User's Manual	Chapters 2 and 3	Note 8
	GTIS	GOES Tap Imaging System (GTIS)		Note 8
	METOC 50-1T-9601	Basic Satellite Imagery Interpretation		Note 8
	METOC 50-1T-9603	Basic Surface Analysis		Note 8
	METOC 50-1T-9605	Meteorology Today, an Introduction to Weather, Climate, and the Environment, Fourth Edition, C. Donald Ahrens	Chapters 2, 4, 5, 7, 8, 9, 10, 12, 16, and 17	Note 8

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
AG3 (Cont)	METOC 50-1T-9606	Encoding, Decoding, and Plotting the Synoptic Report		Note 8
	METOC 60-1T-9601	Oceanography, Sixth Edition	Chapter 2	Note 8
	METOC 60-1T-9602	Acoustics and Sound Ray Theory		Note 8
	METOC 60-1T-9701	Evaluating and Encoding Bathymograph (BT) Data		Note 8
	MIDDS	Meteorology and Oceanography (METOC) Integrated Data Display System (MIDDS) Operator User Guide Version 2.1	Chapter 1	Note 8
	NAVAIR 50-1P-5	The Use of the Skew T, Log P Diagram in Analysis and Forecasting	Chapter 3	Note 1
	NAVEDTRA 10370	Aerographer's Mate Third Class	Chapters 1 through 10	Note 1
	NAVELEXCEN VJO 14203-0302428A	Operator's Manual, Tactical Environmental Support System (TESS (3)) and Shipboard Meteorological and Oceanographic Observing System (SMOOS), Volume III	Section 3.13	Note 8
	NAVMETOC COMINST 3140.1	United States Navy Meteorological & Oceanographic Support System Manual	Chapter 2 and Appendix A	Note 1

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
AG3 (Cont)	NAVMETOCCOMINST 3140.14	Procedures Governing Flight Weather Briefings and Preparing DD Form 175-1 and U.S. Navy Flight Forecast Folder		Note 1
	NAVMETOCCOMINST 3141.2	Surface METAR Observations User's Manual	Chapters 1, 3, 4, 5, 6, 7, and 9	Note 1
	NAVMETOCCOMINST 3142.1	Procedures Governing Pilot Weather Reports		Note 1
	NAVMETOCCOMINST 3143.1	Aerodrome Forecast (TAF) Code		Note 1
	NAVMETOCCOMINST 3144.1	United States Navy Manual For Ship's Surface Weather Observations	Chapters 1 through 9	Note 9
	NAVSEA 0910-LP-242-6900	Technical Manual For Bathythermograph/So und Velocimeter AN/BQH-7A, Oceanographic Data System Surface Ship Application	Chapter 2	Note 1
	NTP 3	Telecommunications Users Manual	All chapters	Note 1
	P-3140	Fleet Numerical Meteorological and Oceanographic Center Products Manual	Chapter 2	Note 4
	P-3146	Fleet Numerical Meteorological and Oceanographic Center Data Request Product (DRP) User's Manual	All chapters	Note 4
	P-3147	Fleet Numerical Meteorological and Oceanographic Center NODDS Manual	All chapters	Note 4

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
AG3 (Cont)	P-3148	Fleet Numerical Meteorological and Oceanographic Center JMV 3.0 Manual	All chapters	Note 4
	P-3710	Fleet Numerical Meteorological and Oceanographic Center OPARS Manual	All chapters	Note 4
	RP 21	Guide to Common Shipboard Expendable BT Recording Malfunctions		Note 8
	RP 33	Fleet Oceanographic and Acoustic Reference Manual	Chapters 1, 2, 4, 5, 6, 7, and 8 and Appendix D	Note 8
	MW-U005en-1.3	DigiCORA MW11 & MARWIN MW12 User's Guide for US NAVY	Section 2, Chapters 1 through 3 and Section 5, All chapters	Note 8
	TESS	Tactical Environmental Support System (TESS) User's Guide		Note 8
	WMO-No. 306	Manual on Codes, International Codes Volume I.1 Part A		Note 8
	WSR-88D Handbook PUP-I	WSR-88D Operator Handbook Principal User Processor, Volume I, Graphic Tablet		Note 7
	WSR-88D Handbook PUP-II	WSR-88D Operator Handbook Principal User Processor, Volume II, Applications Terminal	Chapter 2	Note 7
		Selected Worldwide Marine Weather Broadcasts		Note 8

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
AG2	FH1	National Weather Service Forecasting Handbook No. 1, Part 2 – Facsimile Products		Note 8
	GF MPL NT 97-01BUG	Geophysics Fleet Mission Program Library New Technology (GF MPL NT) Version 2.0 User's Manual	Chapters 2 and 3	Note 8
	METOC 50-1P-0002	Introduction to Forecasting, Volumes 2 and 3	Volume 1, Chapters 5 through 10	Note 8
	METOC 50-1T-9601	Basic Satellite Imagery Interpretation		Note 8
	METOC 50-1T-9603	Basic Surface Analysis		Note 8
	METOC 50-1T-9604	Tropical Synoptic Models		Note 8
	METOC 50-1T-9605	Meteorology Today, an Introduction to Weather, Climate, and the Environment, Fourth Edition, C. Donald Ahrens	Chapters 7, 9, 10, 11, and 12	Note 8
	METOC 50-1T-9606	Encoding, Decoding, and Plotting the Synoptic Report		Note 8
	METOC 50-1T-9607	Tropical Streamline Analysis		Note 8
	METOC 50-1T-9610	A Workbook on Tropical Clouds and Cloud Systems Observed in Satellite Imagery, Volume I		Note 8
	METOC 50-1T-9611	A Workbook on Tropical Clouds and Cloud Systems Observed in Satellite Imagery, Volume II		Note 8

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
AG2 (Cont)	METOC 60-1T-9602	Acoustics and Sound Ray Theory		Note 8
	METOC 60-1T-9701	Evaluating and Encoding Bathythermograph (BT) Data		Note 8
	NAVEDTRA 10370	Aerographer's Mate Second Class, Volume 1	Chapters 1 through 10	Note 1
	NAVEDTRA 10371	Aerographer's Mate Second Class, Volume 2	Chapters 1 through 7	Note 1
	NAVEDTRA 12850	Aerographer's Mate Third Class	Chapters 2 through 6 and 9	Note 1
	NAVMETOCCOMINST 3140.1	United States Navy Meteorological & Oceanographic Support System Manual	Chapters 5 and 7	Note 1
	NAVMETOCCOMINST 3140.14	Procedures Governing Flight Weather Briefings and Preparing DD Form 175-1 and U.S. Navy Flight Forecast Folder		Note 1
	NAVMETOCCOMINST 3142.1	Procedures Governing Pilot Weather Reports		Note 1
	NAVMETOCCOMINST 3143.1	Aerodrome Forecast (TAF) Code		Note 1
	NOSC Technical Document 1369	Effective Use of the Electromagnetic Products of TESS and IREPS	Chapters 8 through 19	Note 8
	P-3140	Fleet Numerical Meteorological and Oceanographic Center Products Manual	Chapter 2	Note 4
	P-3147	Fleet Numerical Meteorological and Oceanographic Center NODDS Manual		Note 4

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
AG2 (Cont)	P-3148	Fleet Numerical Meteorological and Oceanographic Center JMV 3.0 Manual		Note 4
	P-3710	Fleet Numerical Meteorological and Oceanographic Center OPARS Manual		Note 4
	RP 33	Fleet Oceanographic and Acoustic Reference Manual	Chapters 1, 2, 3, 6, and 7	Note 8
	TESS	Tactical Environmental Support System (TESS) User's Guide	Chapter 4	Note 8
AG1	ATP 45	Reporting Nuclear Detonations, Biological and Chemical Attacks, and Predicting and Warning of Associated Hazards and Hazard Areas	Chapters 6, 7, and 9	Note 1
	CNSPINST/CNSLINST 3840.1	COMNAVSURFPAC/ COMNAVSURFLANT INST Joint Surf Manual	Chapters 4, 5, 6, 10, and 11	Note 1
	FH1	National Weather Service Forecasting Handbook No. 1, Part 2 – Facsimile Products	All chapters	Note 8
	GFEMPL NT 97-01BUG	Geophysics Fleet Mission Program Library New Technology (GFEMPL NT) Version 2.0 User's Manual	Chapters 2 and 3	Note 8
	GTIS	GOES Tap Imaging System (GTIS)	All Chapters	Note 8

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
AG1 (Cont)	METOC 50-1P-0002	Introduction to Forecasting, Volumes 2 and 3	Volume 2, Chapters 3 through 5, Volume 3, All chapters	Note 8
	METOC 50-1T-9601	Basic Satellite Imagery Interpretation		Note 8
	METOC 50-1T-9602	Atmospheric Refraction		Note 8
	METOC 50-1T-9604	Tropical Synoptic Models		Note 8
	METOC 50-1T-9605	Meteorology Today, an Introduction to Weather, Climate, and the Environment, Fourth Edition, C. Donald Ahrens	Chapters 4 through 17	Note 8
	METOC 50-1T-9610	A Workbook on Tropical Clouds and Cloud Systems Observed in Satellite Imagery, Volume I	Chapters 3 through 6	Note 8
	METOC 50-1T-9611	A Workbook on Tropical Clouds and Cloud Systems Observed in Satellite Imagery, Volume II	All chapters	Note 8
	METOC 60-1T-9601	Oceanography, Sixth Edition	Chapters 5 and 6	Note 8
	METOC 60-1T-9602	Operational Oceanography, Acoustics and Sound Ray Theory	All chapters	Note 8
	METOC 60-1T-9603	Operational Oceanography, Introduction to Antisubmarine Warfare Sensors and Platforms	All chapters	Note 8

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
AG1 (Cont)	METOC 60-1T-9701	Evaluating and Encoding Bathythermograph (BT) Data		Note 8
	MIDDS	Meteorology and Oceanography (METOC) Integrated Data Display System (MIDDS) Operator User Guide Version 2.1	All chapters	Note 8
	NAVAIR 50-1P-5	The Use of the Skew T, Log P Diagram in Analysis and Forecasting	Chapters 4 through 8	Note 1
	NAVEDTRA 10370	Aerographer's Mate Second Class, Volume 1	Chapters 7 through 9	Note 1
	NAVEDTRA 10371	Aerographer's Mate Second Class, Volume 2	Chapters 1 through 6	Note 1
	NAVEDTRA 12850	Aerographer's Mate Third Class	Chapter 9	Note 1
	NAVEDTRA 12853	Aerographer's Mate 1 & C	Chapters 1 through 14	Note 1
	NAVMETOCCOMINST 3140.1	United States Navy Meteorological & Oceanographic Support System Manual	Chapters 5 and 7	Note 1
	NAVMETOCCOMINST 3140.14	Procedures Governing Flight Weather Briefings and Preparing DD Form 175-1 and U.S. Navy Flight Forecast Folder		Note 1
	NAVMETOCCOMINST 3143.1	Aerodrome Forecast (TAF) Code		Note 1
	NOSC Technical Document 1369	Effective Use of the Electromagnetic Products of TESS and IREPS	Chapters 8 through 19	Note 8

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
AG1 (Cont)	OPNAVINST 3140.1	Warnings and Conditions of Readiness Concerning Hazardous or Destructive Weather Phenomena		Note 1
	OPNAVINST 3710.7	NATOPS General Flight and Operating Instructions	Chapter 5	Note 1
	P-3140	Fleet Numerical Meteorological and Oceanographic Center Products Manual	Chapter 2	Note 4
	P-3148	Fleet Numerical Meteorological and Oceanographic Center JMV 3.0 Manual		Note 4
	RP 33	Fleet Oceanographic and Acoustic Reference Manual	All chapters	Note 5
	TESS	Tactical Environmental Support System (TESS) User's Guide	Chapter 4	Note 8
	WSR-88D Handbook PUP-I	WSR-88D Operator Handbook Principal User Processor, Volume I, Graphic Tablet		Note 7
	WSR-88D Handbook PUP-II	WSR-88D Operator Handbook Principal User Processor, Volume II, Applications Terminal	Chapter 2	Note 7
AGC	AVDEP-HDBK-12	Mapping, Charting, & Geodesy Handbook	Chapters 1 and 2	Note 1
	http://waves.ncdc.noaa.gov	Fleet Numerical Meteorology and Oceanography Detachment, Asheville, North Carolina		Note 5

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
AGC (Cont)	NAVEDTRA 10370	Aerographer's Mate Third Class	Chapters 8 and 9	Note 1
	NAVEDTRA 10371	Aerographer's Mate Second Class, Volume 2	Chapters 5 through 7	Note 1
	NAVEDTRA 12853	Aerographer's Mate 1 & C	Chapters 10, 13 and 14	Note 1
	NAVMETOCCOMINST 1500.3	Procedures for Qualification and Certification of Navy and Marine Corps Air Traffic Controllers as Tower Visibility Observers		Note 9
	NAVMETOCCOMINST 3140.1	United States Navy Meteorological & Oceanographic Support System Manual	All Chapters	Note 1
	NAVMETOCCOMINST 3140.7	Fleet Liaison Program		Note 9
	NAVMETOCCOMINST 3140.17	Meteorology and Oceanography Products		Note 9
	NAVMETOCCOMINST 3140.23	Oceanographic Post- Deployment Reports		Note 9
	NAVMETOCCOMINST 3144.1	United States Navy Manual For Ship's Surface Weather Observations	Chapter 1	Note 9
	NAVMETOCCOMINST 5040.1	Command Inspection Program		Note 9
	NAVMETOCCOMINST 13950.1	Meteorological Equipment Management and Planning Policy	Enclosure 2	Note 1

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
AGC (Cont)	NAVOCEANCOMINST 5220.1	Maintenance of Surface & Upper Air Observation Programs of the Naval Oceanography Command & U. S. Marine Corps (Shore Stations)		Note 9
	NAVOCEANCOMINST 5220.3	Management Control Program		Note 9
	P-3140	Fleet Numerical Meteorological and Oceanographic Center Products Manual	Chapter 2	Note 4
	SECNAVINST 5215.1	Department of the Navy Directives Issuance System	Chapter 4	Note 1
	SECNAVINST 5216.5	Department of the Navy Correspondence Manual	Chapters 1 through 3	Note 1

LEGEND:

Note 1 — To order, MILSTRIP to NAVICP PHILA or via INTERNET
<http://www.nil.navsup.navy.mil/>

Note 2 — NAVSUP P-600 (CD ROM)

Note 3 — INTERNET – <http://neds.nebt.daps.mil/>

Note 4 — INTERNET – <http://fnmoc.navy.mil/>

Note 5 — INTERNET – <http://waves.ncdc.noaa.gov/>

Note 6 — INTERNET – <http://www.nws.noaa.gov/asos/>

Note 7 — INTERNET – <http://www.osf.noaa.gov/>

Note 8 — Letter request to:
Commanding Officer
Naval Oceanographic Office
ATTN: Code N25
1002 Balch Boulevard
Stennis Space Center, MS 39522-5001

Note 9 — Letter request to:
Commander, Naval Meteorology and Oceanography Command
ATTN: Code N11
1020 Balch Boulevard
Stennis Space Center, MS 39529-5005